



#4

SEQUENCE LISTING

<110> Quint, Wilhelmus
Van Doorn, Leendert

<120> PROBES, METHODS AND KITS FOR DETECTION
AND TYPING OF HELICOBACTER PYLORI NUCLEIC ACIDS IN
BIOLOGICAL SAMPLES

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<140> 10/035,978

<141> 2001-12-21

<150> 09/284,725

<151> 1999-04-16

<150> EP 97870133.2

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<223> HpdiaS3 vacA-derived probe

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catgccgctc tttttacaac cgt

23

<210> 38

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<212> DNA

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<223> HpdiaS4 vacA-derived probe

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23

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<213> Artificial Sequence

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<223> HpdiaS5 vacA-derived probe

<400> 39

agtcgcgcyt ttttyacaac cgt

23

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<211> 184

<212> DNA

<213> Artificial Sequence

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taaa 184

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<221> misc_feature

<222> 10, 30, 37, 58, 85, 112

<223> n = A,T,C or G

<400> 41

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caataaaacc ccagataaa 199

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aggcactgct gtaggaacgg tctcagggct tcttagttgg ggrctcaaac aagccgaaga 180
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ataaa 185

<210> 45
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<212> DNA
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agtcacgccg ctttttttac aaccgtgatc attccagcca ttgttggagg tatcgctaca 120
ggcgtgctg taggaacggc ctcagggctt cttagctggg ggctcaaaca agccgaacaa 180
gccaataaag ccccgacaa accc 204

<210> 46
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aggcgctgct gtaggaacgg tttcagggt tcttggtggtg gggctaaaac aagccgaaga 180
agccaataaa accccagata aaccgga                                207
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<210> 47

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<223> Helicobacter pylori vacA nucleic acid sequence

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aggcgctgct gtaggaacgg tctcagggt tcttagctgg gggctcaaac aagccgaaga 180
agccaataaa accccggaca aaccgga                                207
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<210> 48

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<212> DNA

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aggcgctgct gtaggaacgg tctcagggt tcttagctgg gggctcaaac aagccgaaga 180
agccaataaa accccagata aaccgga                                207
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taaagcc 187

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ctgtaggaac ggtttcaggg cttcttagct gggggctcaa acaagccgaa gaagccaata 180
aaacccaga taa 193

<210> 52
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<212> DNA
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<223> Helicobacter pylori vacA nucleic acid sequence

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ccgctgtagg aacggtttca gggcttctta gctgggggct caaacaagcc gaacaagcca 180
ataaagcccc ggacaa 196

<210> 53
<211> 131
<212> DNA
<213> Artificial Sequence

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ggcaccgctg t 131

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ggcgtgctg taggaacggt ctacgggctt cttagttggg gactcaaaca agccgaagaa 180
gcgaa 185

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<221> misc_feature
<222> 87, 143, 165
<223> n = A,T,C or G

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gccataaaaa ccccgataa a 201

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<221> misc_feature
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tgctgtagga acggtctcag ggcttcttag ctgggggctc aaacaagccg aacaagccaa 180
taaagcc 187

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taaaacc 187

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 taaaacc 187

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 <223> n = A,T,C or G

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 cagataaa 188

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<221> misc_feature
<222> 143, 165
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ataaaacccc agataaa 197

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gcgaataaaa ccca 195

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aggcgctgct gtaggaacgg ttctagggct tcttagctgg ggggtcaaac aagccgaaca 180
agccaataaa gccccg 196

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aagccaataa agcccc 196

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tccagccatt gttgggggta tcgtacagc cgctgctgta ggaacgggtt cagggttct 180
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aatcgcccta ttatctctct cgctctagt ggggtgttaa tgggtaccga actaggggct 60
aacacgccaa acgatcccat acacagcgag agtcgcgcct ttttcacaac cgtgatcatt 120
ccagccattg ttggaggtat cgctacaggt gctgctgtag gaacgggtctc agggcttctt 180
agctggggggc tcaaacaagc cgaacaagcc aataaagccc cggacaaa 228
```

<210> 72

<211> 228

<212> DNA

<213> Artificial Sequence

<220>

<223> Helicobacter pylori vacA nucleic acid sequence

<400> 72

```
aatcgcccta ttatctctct cgctttagtg ggggttrtta tgggcaccga actaggggct 60
aacacgccaa acgatcccat acacagcgag agtcgcgcct ttttcacaac cgtgatcatt 120
ccagccattg ttgggggtat cgctacaggc gctgctgtag gaacgggtctc agggcttctt 180
agctggggggc tcaaacaagc cgaacaagcc aataaagccc cggataaa 228
```

<210> 73

<211> 233

<212> DNA

<213> Artificial Sequence

<220>

<223> Helicobacter pylori vacA nucleic acid sequence

<400> 73

```
aatcgcccta ttatctctct cgctttagag ggggtgttaa taggcaccga actaggggct 60
aacacgccaa atgatcccat acacagcgag agtcgcgcct tttttacaac cgttattatt 120
ccagccattg ttgggggtat cgctacaggc gctgctgtag gaacgggtctc agggcttctt 180
agctggggggc tcaaacaagc cgaacaagcc aataaagccc cggataaacc cga 233
```

<210> 74

<211> 300

<212> DNA

<213> Artificial Sequence

<220>

<223> Helicobacter pylori vacA nucleic acid sequence

<400> 74

```
tttaaagggt gatgctcata cagctaattt taaagggtatt gatacgggta atgggtggttt 60
caacacctta gatttttagtg gtgttacagg taagggtcaat atcaacaagc tcatcacagc 120
ttccactaat gtggccggtta aaaacttcaa cattaatgaa ttgattgtta aaaccaatgg 180
tgtgagtggt ggggaataca ctcatcttag cgaagatata ggcagtcaat cgcgcaccaa 240
taccgtgcgt ttggaaactg gcactaggtc aatcttttct gggggtgtta aatttaaagg 300
```

<210> 75

<211> 300

<212> DNA

<213> Artificial Sequence

<220>

<223> Helicobacter pylori vacA nucleic acid sequence

<400> 75

```
tttaaagggtg gatgctcata cagctaattt taaagggtatt gatacgggta atgggtgggtt 60
caacacctta gatttttagtg gtgttacagg taagggtcaat atcaacaagc tcattacggc 120
ttccactaat gtggccgcta aaaacttcaa cattaatgaa ttgttggtta agaccaatgg 180
ggtagagtgtg ggggaatata ctcatttttag cgaagatata ggcagtcaat cgcgcatcaa 240
taccgtgcgt ttggaaactg gcactaggtc aatcttttct ggggggtgtca aatttaaagg 300
```

<210> 76

<211> 300

<212> DNA

<213> Artificial Sequence

<220>

<223> Helicobacter pylori vacA nucleic acid sequence

<400> 76

```
tttaaaagtg gatgctcata cagctaattt taaagggtatt gatacgggta atgggtgggtt 60
caacaccttg gatttttagtg gcgttacaga caaagtcaat atcaacaagc tcatcacagc 120
ttccactaat gtggccatta aaaacttcaa cattaatgaa ttgttggtta agaccaatgg 180
ggtagagtgtg ggggaatata ctcatttttag cgaagatata ggcagtcaat cgcgcatcaa 240
caccgtgcgt ttagaaactg gcactaggtc aatcttttct ggggggtgtca aatttaaaag 300
```

<210> 77

<211> 300

<212> DNA

<213> Artificial Sequence

<220>

<223> Helicobacter pylori vacA nucleic acid sequence

<400> 77

```
tttaaagggtg gatgctcata cagctaattt taaagggtatt gatacgggta atgggtgggtt 60
caacacctta gatttttagtg gtgttacagg taagggtcaat atcaacaagc tcatcacagc 120
ttccactaat gtggccgcta aaaacttcaa cattaatgaa ttgattgtta aaaccaatgg 180
ggtagagtgtg ggggaatata ctcatttttag cgaagatata ggcagtcaat cgcgcatcaa 240
taccgtgcgt ttggaaactg gcactaggtc aatctattct ggcggtgtta aatttaaagg 300
```

<210> 78

<211> 300

<212> DNA

<213> Artificial Sequence

<220>

<223> Helicobacter pylori vacA nucleic acid sequence

<400> 78

```
tttaaaagtg gatgctcata cagctaattt taaagggtatt gatacgggta atgggtgggtt 60
caacacctta gatttttagtg gtgttacagg taagggtcaat atcaacaagc tcatcacagc 120
ttccactaat gtggccgcta aaaacttcaa cattaatgaa ttgattgtta aaaccaatgg 180
ggtagagtgtg ggggaatata ctcatttttag cgaagatata ggcagtcaat cgcgcatcaa 240
taccgtgcgt ttggaaactg gcactaggtc aatctattct ggcggtgtta aatttaaagg 300
```

<210> 79

<211> 300

<212> DNA

<213> Artificial Sequence

<220>

<223> Helicobacter pylori vacA nucleic acid sequence

<400> 79

```
ttttaaagtg gatgctcata cagctaattt taaagggtatt gatactggta atgggtggttt 60
caacacctta gatttttagtg gtgttacaaa caaagtcaat atcaacaagc tcattacagc 120
ttccactaat gtggccggtta aaaacttcaa cattaatgaa ttgttgggta agattaatgg 180
ggtgagtggtg ggggaatata cttatttttag cgaagatata ggcagtcaat cgcgcatcaa 240
caccgtgcgt ttggaaactg gcactaggtc aatctattct ggcggtggtta aatttaaagg 300
```

<210> 80

<211> 300

<212> DNA

<213> Artificial Sequence

<220>

<223> Helicobacter pylori vacA nucleic acid sequence

<400> 80

```
tttaaagggtg gatgctcata cagctaattt taaagggtatt gatacgggta atgggtggttt 60
caacacctta gatttttagtg gtgttacagg taagggtcaat atcaacaagc tcatcacggc 120
ttccactaat gtggccggtta aaaacaacaa cattaatgaa ttgggtgggta aaaccaatgg 180
gataagtgtg ggggaatata ctcatttttag cgaagatata ggcagtcaat cgcgcatcaa 240
taccgtgcgt ttggaaacag gcactaggtc aatcttttct ggggggtgtca aattttaaag 300
```

<210> 81

<211> 300

<212> DNA

<213> Artificial Sequence

<220>

<223> Helicobacter pylori vacA nucleic acid sequence

<400> 81

```
ttttaaagtg gatgctcata cagctaattt taaagggtatt gatacgggta atgggtggttt 60
caacacctta gatttttagtg gtgttacagg taagggtcaat atcaacaagc tcattacggc 120
ttccactaat gtagccggtta aaaacttcaa cattaatgaa ttgttgggta agaccaatgg 180
ggtgagtggtg ggggaatata ctcatttttag cgaagatata ggcagtcaat cgcgcatcaa 240
caccgtgcgt ttggaaactg gcactaggtc aatcttttct ggggggtgtca aattttaaag 300
```

<210> 82

<211> 300

<212> DNA

<213> Artificial Sequence

<220>

<223> Helicobacter pylori vacA nucleic acid sequence

<400> 82

```
tttaaagggtg gatgctcata cagctaattt taaagggtatt gatacgggta atgggtggttt 60
caacacctta gatttttagtg gtgttacagg taagggtcaat atcaacaagc tcatcacagc 120
ttccactaat gtggccggtta aaaacttcaa cattaatgaa ttgattgtta aaaccaatgg 180
gataagtgtg ggggaatata ctcatttttag cgaagatata ggaagtcaat cgcgcatcaa 240
taccgtgcgt ttggaaactg gcactagatc aatcttttct ggggggtgtta aatttaaagg 300
```

<210> 83
<211> 375
<212> DNA
<213> Artificial Sequence

<220>
<223> Helicobacter pylori vacA nucleic acid sequence

<400> 83
tttaagagtg gacgctcata cagcttattt taatggcaat atttatctgg gaaaatccac 60
gaatttaaga gtgaatggcc atagcgctca ttttaaaaat attgatgccg gcaagagcga 120
taacgggcta aacactagcg ctttggattt cagcggcggt acagacaaag tcaatatcaa 180
caagctcact acatctgcc ctaatgtgaa cgttaaaaac tttgacgtta aggaattggt 240
ggttacaacc cgtgttcaga gttttgggca atacactatt tttggcgaaa atataggcga 300
taagtctcgc attggtgtcg tgagtttgca aacgggatat agcccggcct attctggggg 360
cgttactttt aaaag 375

<210> 84
<211> 375
<212> DNA
<213> Artificial Sequence

<220>
<223> Helicobacter pylori vacA nucleic acid sequence

<400> 84
cttaagagtg gatgctcata cagcttattt taatggcaat atttatttgg gaaaatccac 60
gaatttaaga gtgaatggcc atagcgctca ttttaaaaat attgatgccg gtaagagcga 120
taacgggcta aacactagtg ctttggattt tagcggcggt acagataaag tcaatatcaa 180
caagctcact acatctgcc ctaatgtgaa cgttaaaaac tttgacatta aggaattggt 240
ggttacaacc cgagttcaaa gttttgggca atacactatt tttggcgaaa atataggcga 300
taagtctcgc attggtgtcg ttagtttgca aacgggatat agcccggcct attctggggg 360
cgttactttt aaaag 375

<210> 85
<211> 374
<212> DNA
<213> Artificial Sequence

<220>
<223> Helicobacter pylori vacA nucleic acid sequence

<400> 85
tttaagagtg gatgctcata cagcttattt taatggcaat atttatctgg gaaaatccac 60
gaatttaaga gtgaatggcc atagcgctca ttttaaaaat attgatgccg gtaagagcga 120
taacgggcta aacactacca ctttggattt cagcggcggt acagataaag tcaatatcaa 180
caagctcact acatctgcc ctaatgtgaa cattaaaaac tttgacatta aggaattagt 240
ggttacaacc cgagttcaga gttttgggca atacactatt tttggcgaaa atataggcga 300
taagctgcac attggtgtcg tgagtttgca aacgggatat agcccagcct attctggggg 360
gcttactttt aaag 374

<210> 86
<211> 375
<212> DNA
<213> Artificial Sequence

<220>
<223> Helicobacter pylori vacA nucleic acid sequence

<400> 86
tttaagagtg gatgctcata cagcttattt taatggcaat atttatctgg gaaaatccac 60

```

gaattttaaga gtgaatggcc atagcgctca ttttaaaaat attgatgcca gtaagagcga 120
taacggggcta aacactagct ctttggattt cagtggcggt acagacaaaag tcaatatcaa 180
caagctcact acatctgccca ctaatgtgaa cgttaaaaaac tttgacatta aggaattggg 240
ggttacaacc cgcgttcaga gttttgggca atacactatt tttggcgaaa atataggcga 300
taagtctcgc attggtgtcg ttagtttgca aacgggatat agcccggcct attctggggg 360
cgttactttt aaaag

```

```

<210> 87
<211> 365
<212> DNA
<213> Artificial Sequence

```

```

<220>
<223> Helicobacter pylori vacA nucleic acid sequence

```

```

<400> 87
gatgctcata cagcttattt taatggcaat atttatctgg gaaaatccac gaattttaaga 60
gtgaatggcc atagcgctca ttttaaaaat attgatgcca gtaagagcga taacggggcta 120
aacactagcg ctttggattt yagcggcggt acagayaaag tcaatatcaa caagctcact 180
acatctgccca ctaatgtgaa cgttaaaaaac tttgacatta aggaattagt ggttacaacc 240
cgagttcaaa gttttgggca atacactatt tttggcgaaa atataggcga taagtctcgc 300
attggtgtcg ttagtttgca aacgggatat agcccggcct attctggggg cgttactttt 360
aaaag

```

```

<210> 88
<211> 375
<212> DNA
<213> Artificial Sequence

```

```

<220>
<223> Helicobacter pylori vacA nucleic acid sequence

```

```

<400> 88
tttaagaggg gatgctcata cagcttattt taatggcaat atttatttgg gaaaatccac 60
gaattttaaga gtgaatggcc atagcgctca ttttaaaaat attgatgcca gtaagagcga 120
taacggggcta aacactagcg ytttggattt tagcggcggt acagayaaag tcaatatcaa 180
caagctcact acatctgccca ctaatgtgaa crttaaaaac tttgayatta aggaattggg 240
ggttacaacc cgagttcaaa gttttgggca atacactatt tttggcgaaa atataggcga 300
tmagtctcgc attggtgtcg ttagtttgca aacgggatat agcccr gcct attctggggg 360
cgttactttt aaaag

```

```

<210> 89
<211> 375
<212> DNA
<213> Artificial Sequence

```

```

<220>
<223> Helicobacter pylori vacA nucleic acid sequence

```

```

<400> 89
tttaagcgtg gatgctcata cagcttattt taatggtaat atttatctgg gaaaatccac 60
gaattttaaga gtgaatggcc atagcgctca ttttaaaaat attgatgcca caaagagcga 120
taacggggcta aacactagcg ctttggattt cagcggcggt acagataaag tcaatatcaa 180
caagctcact acatctgccca ctaacgtgaa cattaaaaaac tttgacatta aggaattggg 240
ggttacaacc cgagttcaaa gttttgggca atacactatt tttggcgaaa atataggcga 300
taagtctcgc attggtgtcg tgagtttgca aacgggatat agcccggcct attctggggg 360
cgttactttt aaaag

```

```

<210> 90
<211> 375
<212> DNA

```

<213> Artificial Sequence

<220>

<223> Helicobacter pylori vacA nucleic acid sequence

<400> 90

```
tttaagagtg gatgctcata cagcttattt taatggcaat atttatctgg gaaaatccac 60
gaatttataa gtgaatggcc atagcgctca ttttaaaaat attgatgcca gtaagagcga 120
taatggctcta aacactagtg ctttggattt gagcggcggt acagacaaag tcaatatcaa 180
caagctcact acagctgcca ctaatgtgaa cattaaaaac tttgacatta aggaattagt 240
ggttacgacc cgtgttcaga gttttgggca atacactatt tttggcgaaa atataggaga 300
tcaatcgcg c attggtgtcg ttagtttgca aactggctat agcccggcct attctggggg 360
cgttactttt aaaag 375
```

<210> 91

<211> 375

<212> DNA

<213> Artificial Sequence

<220>

<223> Helicobacter pylori vacA nucleic acid sequence

<400> 91

```
cttaagagtg gatgctcata cagcttattt taatggcaat atttatctgg gaaaatccac 60
gaattttaaga gtgaatggcc atagcgctca ttttaaaaat attgatgcta gtaagagcga 120
taacgggcta aacactagcg ctttggattt tagcggcggt acagacaaag tcaatatcaa 180
caagctcact acatctgcca ctaatgtgaa cattaaaaac tttgacatta aggaattggg 240
ggttacaacc cgagttcaaa gttttgggca atacactatt tttggcgaaa atataggcga 300
taagtctcgc attggtgtcg tgagtttgca aacgggatat agcccggcct attctggggg 360
cgttactttt aaaag 375
```

<210> 92

<211> 449

<212> DNA

<213> Artificial Sequence

<220>

<223> Helicobacter pylori cagA nucleic acid sequence

<400> 92

```
atgactaacg aaaccattaa ccaacaacca caaagcgaag cggcttttaa cccgcagcaa 60
tttatcaata atcttcaagt agcttttctt aaagttgata acgctgtcgc ttcatacgat 120
cctgatcaaa aaccaatcgt tgataagaac gatagggata ataggcaagc ttttgatgga 180
atctcgcaat taagggaaga atactccaat aaagcgatca aaaatcctac caaaaagaat 240
cagtattttt cagactttat caataagagc aatgatttaa tcaacaaaga cgctctcatt 300
gatgtagaat cttccacaaa gagctttcag aaatttgggg atcagcggtta ccgaattttc 360
acaagttggg tgtcccatca aaacgatccg tctaaaatca acaccgcatc gatccgaaat 420
tttatggaaa atatcatata accccctat 449
```

<210> 93

<211> 449

<212> DNA

<213> Artificial Sequence

<220>

<223> Helicobacter pylori cagA nucleic acid sequence

<400> 93

```
atgactaacg aaaccattaa ccaacaacca caaaccgaag cggcttttaa cccgcagcaa 60
tttatcaata atcttcaagt agcttttctt aaagttgata acgctgtcgc ttcatacgat 120
cctgatcaaa aaccaatcgt tgataagaac gatagggata acaggcaagc ttttgatgga 180
```

```

atctcgcaat taaggaaga atactccaat aaagcgatca aaaatcctac caaaaagaat 240
cagtattttt cagactttat caataagagc aatgatttaa tcaacaaaga cgctctcatt 300
gatgtagaat cttccacaaa gagctttcag aaatttgggg atcagcggtta ccgaattttc 360
acaagttggg tgtcccatca aaacgatccg tctaaaatca acacccgatc gatccgaaat 420
tttatggaaa atatcatata accccctat 449

```

```

<210> 94
<211> 449
<212> DNA
<213> Artificial Sequence

```

```

<220>
<223> Helicobacter pylori cagA nucleic acid sequence

```

```

<400> 94
atggctaacg aaactattaa ccaacaacca caaacccaag cggcttttaa cccgcagcaa 60
tttatcaata atcttcaagt agcttttctt aaagttgata acgctgtcgc ttcatacgat 120
cctgatcaaaa aaccaatcgt tgataagaac gatagggata acaggcaagc ttttgatgga 180
atctcgcaat taaggaaga atactccaat aaagcgatca aaaatcctac caaaaagaat 240
cagtattttt cagactttat caataagagc aatgatttaa tcaacaaaga cgctctcatt 300
gatgtagaat cttccacaaa gagctttcag aaatttgggg atcagcggtta ccgaattttc 360
acaagttggg tgtcccatca aaacgatccg tctaaaatca acacccgatc gatccgaaat 420
tttatggaaa atatcatata accccctat 449

```

```

<210> 95
<211> 449
<212> DNA
<213> Artificial Sequence

```

```

<220>
<223> Helicobacter pylori cagA nucleic acid sequence

```

```

<400> 95
atgactaacg aaaccattaa ccaacaacca caaacccaag cggcttttaa cccgcagcaa 60
tttatcaata atcttcaagt ggcttttctt aaagttgata acgctgtcgc ttcatacgat 120
cctgatcaaaa aaccaatcgt tgataagaac gatagggata ataggcaagc ttttgatgga 180
atctcgcaat taaggaaga atactccaat aaagcgatca aaaatcctac caaaaagaat 240
cagtattttt cagactttat caataagagc aatgatttaa tcaacaaaga cgctctcatt 300
gatgtagaat cttccacaaa gagctttcag aaatttgggg atcagcggtta ccgaattttc 360
acaagttggg tgtcccatca aaacgatccg tctaaaatca acacccgatc gatccgaaat 420
tttatggaaa atatcatata accccctat 449

```

```

<210> 96
<211> 449
<212> DNA
<213> Artificial Sequence

```

```

<220>
<223> Helicobacter pylori cagA nucleic acid sequence

```

```

<400> 96
atgactaacg aaaccattaa ccaacaacca caaacccaag cggcttttaa cccgcagcaa 60
tttatcaata atcttcaagt ggcttttctt aaagttgata acgctgtcgc ttcatacgat 120
cctgatcaaaa aaccaatcgt tgataagaac gatagggata acaggcaagc ttttgatgga 180
atctcgcaat taaggaaga atactccaat aaagcgatca aaaatcctac caaaaagaat 240
cagtattttt caaactttat caataagagc aatgatctaa tcaacaaaga caatctcatt 300
gatgtagaat cttccaaaaa gagctttcag aaatttgggg atcagcggtta ccgaattttc 360
acaagttggg tgtcccatca aaacgatccg tctaaaatca acacccgatc gatccgaaat 420
tttatggaaa atatcatata accccctat 449

```

```

<210> 97

```

<211> 449
<212> DNA
<213> Artificial Sequence

<220>
<223> Helicobacter pylori cagA nucleic acid sequence

<400> 97
atgactaacg aaaccattaa ccaacaacca caaaccgaag cggcttttaa cccgcagcaa 60
tttatcaata atcttcaagt agcttttctt aaagttgata acgctgtcgc ttcatacgat 120
cctgaccaaa aaccaatcgt tgataagaac gatagggata acaggcaagc ttttgataga 180
atctcacaat taagggagga atactccaat aaagcgatca aaaatcctac caaaaagaat 240
cagtattttt cagactttat cgataagagc aacgatttaa tcaacaaaga cgctctcatt 300
gatgtagaat cttccacaaa gagctttcag aaatttgggg atcagcgta ccgaattttc 360
acaagttggg tgtcccatca aaacgatccg tctaaaatca acacccgatc gatccgaaat 420
tttatggaaa atatcatata accccctat 449

<210> 98
<211> 449
<212> DNA
<213> Artificial Sequence

<220>
<223> Helicobacter pylori cagA nucleic acid sequence

<400> 98
atgactaacg aaaccattaa ccaacaacca caaaccgaag cggcttttaa cccgcagcaa 60
tttatcaata atcttcaagt ggcttttctt aaagttgata acgctgtcgc ttcatacgat 120
cctgatcaaa aaccaattat tgataagaac gatagggata acaggcaagc ttttgatgga 180
atctcgcaat taagggaaga atattccaat aaagcgatca aaaatcctac caaaaagaat 240
cagtattttt cagactttat cgataagagc aatgatttaa tcaacaaaga caatctcatt 300
gatgtagaat cttccacaaa gagctttcag aaatttgggg atcagcgta ccgaattttc 360
acaagttggg tgtcccatca aaacgatccg tctaaaatca acacccgatc gatccgaaat 420
tttatggaaa atatcatata accccctat 449

<210> 99
<211> 449
<212> DNA
<213> Artificial Sequence

<220>
<223> Helicobacter pylori cagA nucleic acid sequence

<400> 99
atgactaacg aaaccattaa ccaacaacca caaaccgaag cggcttttaa cccgcagcaa 60
tttatcaata atcttcaagt agcttttctt aaagttgata atgctgtcgc ttcatacgat 120
tctgatcaaa aaccaatcat tgataagaac gatagggata acaggcaagc ttttgataga 180
atctcgcaat taagggaaga atactccaat aaagcgatca aaaatcctac caaaaagaat 240
cagtattttt cagactttat cgataagagc aacgatttaa tcaacaaaga caatctcatt 300
gatgtagaat cttccacaaa gagctttcag aaatttgggg atcagcgta ccgaattttc 360
acaagttggg tgtcccatca aaatgatccg tctaaaatca acacccgatc gatccgaaat 420
tttatggaaa atatcatata accccctat 449

<210> 100
<211> 449
<212> DNA
<213> Artificial Sequence

<220>
<223> Helicobacter pylori cagA nucleic acid sequence

```

<400> 100
atgactaacg aaactattga ccaacaacca caaaccgaag cggcttttaa cccgcagcaa 60
tttattaata atcttcaggt agcttttctt aagcttgata acgctgtcgc ttcatttgat 120
cctgatcaaa aaccaatcgt tgataagaat gatagggata acaggcaagc ttttgatgga 180
atctcgcaat taagggaaga atactccaat aaagcgatca aaaatcctac caaaaagaat 240
cagtattttt cagactttat caataagagc aatgatttaa tcaacaaaga cgctctcatt 300
gatgtagaat cttccacaaa gagctttcag aaatttgggg atcagcggtta ccgaattttc 360
acaagttggg tgtcccatca aaacgatccg tctaaaatca acacccgatc gatccaaaat 420
tttatggaaa atatcatata accccctat                                     449

```

```

<210> 101
<211> 449
<212> DNA
<213> Artificial Sequence

```

```

<220>
<223> Helicobacter pylori cagA nucleic acid sequence

```

```

<400> 101
atgactaacg aaactattga ccaacaacca caaactgaag cggcttttaa cccgcagcaa 60
tttatcaata atcttcaagt ggcttttctt aagcttgata acgctgtcgc ttcatttgat 120
cctgatcaaa aaccaatcgt tgataagaac gatagggata acaggcaagc ttttgatgga 180
atctcgcaat taagggaaga atactccaat aaagcgatca aaaatcctac caaaaagaat 240
cagtattttt cagactttat caataagagc aatgatttaa tcaacaaaga cgctctcatt 300
gatgtagaat cttccacaaa gagctttcag aaatttgggg atcagcggtta ccgaattttc 360
acaagttggg tgtcccatca aaacgatccg tctaaaatca acacccgatc gatccgaaaat 420
tttatggaaa atatcatata accccctat                                     449

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<210> 102
<211> 449
<212> DNA
<213> Artificial Sequence

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<220>
<223> Helicobacter pylori cagA nucleic acid sequence

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<400> 102
atgactaacg aaactattaa ccaacagcca caaaccgaag cggcttttaa cccgcagcaa 60
tttatcaata atcttcaagt agcttttctt aagcttgata acgctgtcgc ttcatttgat 120
cctgatcaaa aaccaatcgt tgataagaac gatagggata ataggcaggc ttttgatgga 180
atctcgcaat taagggaaga atactccaat aaagcgatca aaaatcctac caaaaagaat 240
cagtattttt cagactttat caataagagc aatgatttaa tcaacaaaga caatctcatt 300
gatgtagaat cttccacaaa gagctttcag aaatttgggg atcagcggtta ccgaattttc 360
acaagttggg tgtcccatca aaacgatccg tctaaaatca acacccgatc gatccgaaaat 420
tttatggaaa atatcatata accccctat                                     449

```

```

<210> 103
<211> 449
<212> DNA
<213> Artificial Sequence

```

```

<220>
<223> Helicobacter pylori cagA nucleic acid sequence

```

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<400> 103
atgactaacg aaaccattaa ccaacaacca caaaccgaag cggcttttaa cccgcagcaa 60
tttatcaata atcttcaagt ggcttttctt aagcttgata atgctgttgc ttcatttgat 120
cctgatcaaa aaccaatcgt tgataagaac gatagggata acaggcaagc ttttgatgga 180
atctcgcaat taagggaaga atactccaat aaagcgatca aaaatcctac caaaaagaat 240
cagtattttt cagactttat cgataagagc aacgatttaa tcaacaaaga caatctcatt 300
gatgtagaat cttccacaaa gagctttcag aaatttgggg atcagcggtta ccgaattttc 360

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acaagttggg tgtcccatca aaacgatccg tctaaaatca acacccgatc gatccgaaat 420
tttatggaaa atatcatata accccctat 449

<210> 104
<211> 449
<212> DNA
<213> Artificial Sequence

<220>
<223> Helicobacter pylori cagA nucleic acid sequence

<400> 104
atgactaacg aaaccattaa ccaacaacca caaaccgaag cggcttttaa cccgcagcaa 60
tttatcaata atcttcaagt ggcttttctt aaagttgata acgttgtcgc ttcatacgat 120
cctgatcaaa aaccaatcgt tgataagaac gatagggata ataggcaagc ttttgatgga 180
atctcgcaat taagggaaga atactccaat aaagcgatca aaaatcctac caaaaagaat 240
cagtattttt cagactttat caataagagc aatgatttta tcaacaaaga cgctctcatt 300
gatgtagaat cttccacaaa gagctttcag aaattttggg atcagcgta cgaatttttc 360
acaagttggg tgtcccatca aaacgatccg tctaaaatca acacccgatc gatccgaaat 420
ttcatggaaa atatcatata accccctat 449

<210> 105
<211> 449
<212> DNA
<213> Artificial Sequence

<220>
<223> Helicobacter pylori cagA nucleic acid sequence

<400> 105
atgactaacg aaactattga tcaacaacca cgaaccgaag cggcttttaa cccgcagcaa 60
tttatcaata atcttcaagt agcttttctt aaagttgata acgttgtcgc ttcatttgat 120
cctaataaaa aaccaatcgt tgataagaac gatagggata acaggcaagc ttttgatgga 180
atctcgcaat taagggaaga atactccaat aaagcgatca aaaatcctgc caaaaagaat 240
cagtattttt cagactttat caataagagc aatgatctta tcaacaaaga caatctcatt 300
gatgtagaat cttccacaaa gagctttcag aaattttggg atcagcgta ccaaatttttc 360
acaagttggg tgtcccatca aaacgatccg tctaaaatca acacccgatc gatccgaaat 420
tttatggaaa atatcatata accccctat 449

<210> 106
<211> 449
<212> DNA
<213> Artificial Sequence

<220>
<223> Helicobacter pylori cagA nucleic acid sequence

<400> 106
atgactaacg aaaccattaa ccaacaacca caaaccgaag cggcttttaa cccgcagcaa 60
tttatcaata atcttcaagt ggcttttatt aaagttgata atgttgtcgc ttcatttgat 120
cctgatcaaa aaccaatcgt tgataagaat gatagggata ataggcaagc ttttgagaaa 180
atctcgagc taaggaggga attcgcta ataaagcgatca aaaatcctgc caaaaagaat 240
cagtattttt caagctttat cagtaagagc agtgatttaa tcaacaaaga cagtctcatt 300
gatacagggt cttccataaa gagctttcag aaattttgga ctcagcgta ccaaattttt 360
atgaattggg tgtcccatca aaagatcca tctaaaatca acacccaaaa aatccgaggt 420
tttatggaaa atatcatata accccctat 449

<210> 107
<211> 464
<212> DNA
<213> Artificial Sequence

<220>

<223> Helicobacter pylori cagA nucleic acid sequence

<400> 107

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atgactaacg aaactattga tcaaacaaga acaccagacc aaacacaaag ccaaacagct 60
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gtcgtttcat ttgatcctga tcaaaaacca atcgttgata agaatgatag ggataacagg 180
caagcttttg agaaaatctc gcagctaagg gaggaattcg ctaataaagc gatcaaaaat 240
cctgccaaaa agaatacagta tttttcaagc tttatcagta agagcagtga tttagtcaac 300
aaagacagtc tcattgatac aggttcttcc ataaagagct ttcagaaatt tgggactcag 360
cgttaccaaa tttttatgaa ttgggtgtcc catcaaaaag atccatctaa aatcaacacc 420
caaaaaatcc aagattttat ggaaaatata atacaacccc ctat 464
```

<210> 108

<211> 464

<212> DNA

<213> Artificial Sequence

<220>

<223> Helicobacter pylori cagA nucleic acid sequence

<400> 108

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tttgttccgc aacgatttat caataatctt caagtagctt ttattaaagt tgataacgct 120
gtctcttcat ttgatcctga tcaaaaacca atcgttgata agaatgatag ggataacagg 180
caagcttttg agaaaatctc gcaactaagg gaagaatacg ccaataaagc gatcaaaaat 240
cctgccaaaa agaatacagta tttttcagac tttatcaata agagcaatga tttgatcaac 300
aaagacaatc tcattgctgt agattcttcc gtagagacct ttaagaaatt tggggatcag 360
cgttaccaaa tttttacgaa ttgggtgtcc cttcaaaaag atccgtctaa aatcaacacc 420
cgacaaatcc gaaattttat ggaaaatata atacaacccc ctat 464
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<210> 109

<211> 464

<212> DNA

<213> Artificial Sequence

<220>

<223> Helicobacter pylori cagA nucleic acid sequence

<400> 109

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gtcgtttcat ttgatcctga tcaaaaacca atcgttgata agaatgatag ggataacagg 180
caagcttttg agaaaatctc gcaactaagg gaagaatacg ccaataaagc gatcaaaaat 240
cctgccaaaa agaatacagta tttttcagac tttatcaata agagcaatga tttgatcaac 300
aaagacaatc tcattgctgt agattcttct gtagagagct ttaagaaatt tggggatcag 360
cgttaccaaa tttttacgag ttgggtgtcc cttcaaaaag atccgtctca aatcaacacc 420
cgacaaatcc gaaattttat ggaaaatata atacaacccc ctat 464
```

<210> 110

<211> 464

<212> DNA

<213> Artificial Sequence

<220>

<223> Helicobacter pylori cagA nucleic acid sequence

<400> 110

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tttgttccgc aacgatttat caataatctt caagtagctt ttcttaaagt tgataacgct 120
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gtcgtttcat ttgatcctga tcaaaaacca atcgttgata agaatgatag ggataacagg 180
caagcttttg agaaaatctc gcaactaagg gaagaatacg ccaataaagc gatcaaaaat 240
cctgccaaaa agaatcagta tttttcagac tttatcaata agaccaatga tttgatcaac 300
aaagacaatc tcattgctgt agattcttcc gtagatagct ttaagaaatt tggggatcag 360
cgttaccaaa tttttacgag ttgggtgtcc cttcaaaaag atccgtctaa aatcaacacc 420
caacaaatcc gaaattttat ggaaaatata atacaacccc ctat 464

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<210> 111
<211> 464
<212> DNA
<213> Artificial Sequence

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<220>
<223> Helicobacter pylori cagA nucleic acid sequence

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<400> 111
atgactaacg aaaccattga tcaaacaca acaccagatc aaacaccaa tcaaacagat 60
tttgttccgc aacgatttat caataatctt caagtagctt ttattaaagt tgatgacgct 120
gtcgtttcat ttgatcccgga tcaaaaacca atcgttgata agaatgatag ggataacagg 180
caagcttttg agaaaatctc gcaactaagg gaagaatacg ccaataaagc gatcaaaaat 240
cccacaaaaa agaatcagta tttttcagac tttatcaata agaccaatga tttgatcaac 300
aaagacaatc tcattgctgt agattcttcc gtagagagct ttaagaaatt tggggatcag 360
cgttaccaaa tttttacgag ttgggtgtcc cttcaaaaag atccgtctaa aatcaacacc 420
caacaaatcc gaaattttat ggaaaatata atacaacccc ctat 464

```

```

<210> 112
<211> 464
<212> DNA
<213> Artificial Sequence

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<220>
<223> Helicobacter pylori cagA nucleic acid sequence

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<400> 112
atgactaacg aaaccattga tcaaacaca acaccagatc aaacaccaa tcaaacagat 60
tttgttccgc aacgatttat caataatctt caagtagctt ttattaaagt tgataacgct 120
gttgctttcat ttgatcccgga tcaaaaacca atcgttgata agaatgatag ggataacagg 180
caagcttttg agaaaatctc gcaactaagg gaagaatacg ccaataaagc gatcaaaaat 240
cctgccaaaa agaatcagta tttttcagac tttatcaata agagcaatga tttgatcaac 300
aaagacaatc tcattgctgt agattcttcc gtagatagct ttaagaaatt tggggatcag 360
cgttaccaaa tttttacgag ttgggtgtcc cttcaaaaag atccgtctca aatcaacacc 420
caacaaatcc aaaattttat ggaaaatata atacaacccc ctat 464

```

```

<210> 113
<211> 464
<212> DNA
<213> Artificial Sequence

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<220>
<223> Helicobacter pylori cagA nucleic acid sequence

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```

<400> 113
atgactaacg aaaccattga tcaaacaca acaccagatc aaacactaaa ccaaacggat 60
tttgttccgc aacgatttat caataatctt caagtagctt ttattaaagt tgataacgct 120
gtcgttttat ttgatcccgga tcaaaaacca atcgttgata agaatgatag ggataacagg 180
caagcttttg agaaaatctc gcaactaagg gaagaatacg ccaataaagc gatcaaaaat 240
cccacaaaaa agaatcagta tttttcagac tttatcaata agagcaatga tttgatcaac 300
aaagacaatc tcattgctgt agattcttcc gtagatagct ttaagaaatt tggggatcag 360
cgttaccaaa tttttacgag ttgggtgtcc cttcaaaaag atccgtctca aatcaacacc 420
cgacaaatcc gaaattttat ggaaaatata atacaacccc ctat 464

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<210> 114
<211> 464
<212> DNA
<213> Artificial Sequence

<220>
<223> Helicobacter pylori cagA nucleic acid sequence

<400> 114
atgactaacg aaaccattga tcaacaata acaccagatc aaacaccaa ccaaacggat 60
tttgttccgc aacgatttat caataatctt caagtagctt ttatcaaagt tgataacgct 120
gtcgtttcat ttgatcctga tcaaaaacca atcgttgata agaataatg ggataacagg 180
caagcttttg agaaaatctc gcaattaagg gaagaatacg ccaataaagc gatcaaaaat 240
cctgccaaaa agaatacagta ttttttagac tttatcaata agagcaatga tttgatcaac 300
aaagacaatc tcattgctgt agattcttcc gtagatagct ttaagaaatt tggggatcag 360
cgttaccaa tttttacgag ttgggtgtcc cttcaaaaag atccgtctaa aatcaacacc 420
caacaaatcc gaaattttat ggaataatc atacaacccc ctat 464

<210> 115
<211> 132
<212> DNA
<213> Artificial Sequence

<220>
<223> Helicobacter pylori vacA nucleic acid sequence

<400> 115
ccctattatc tctctcgctc tagtgggggt gttaatgggt accgaactag gggctaacac 60
gccaaacgat ccatacaca gcgagagtcg cgcctttttt acaaccgtga tcattccagc 120
cattgttggg gg 132

<210> 116
<211> 132
<212> DNA
<213> Artificial Sequence

<220>
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<400> 116
ccctattatc tctctcgctc tagtgggggt gttaatgggt accgaactag gggctaacac 60
gccaaacgat ccatacaca gcgagagtcg cgcctttttt acaaccgtga tcattccagc 120
cattgttggg gg 132

<210> 117
<211> 132
<212> DNA
<213> Artificial Sequence

<220>
<223> Helicobacter pylori vacA nucleic acid sequence

<400> 117
ccctattatc tctctcgctc tagtgggggt gttaatgggc accgaactag gggctaatac 60
gccaaacgat ccatacaca gcgagagtcg cgcctttttt acaaccgtga tcattccagc 120
cattgttggg gg 132

<210> 118
<211> 132
<212> DNA
<213> Artificial Sequence

<220>

<223> Helicobacter pylori vacA nucleic acid sequence

<400> 118

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gccaaacgat ccatacaca gcgagagtcg cgcctttttc acaaccgtga tcattccagc 120
cattgttggg gg                                     132
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<210> 119

<211> 132

<212> DNA

<213> Artificial Sequence

<220>

<223> Helicobacter pylori vacA nucleic acid sequence

<400> 119

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gccaaacgat ccatacaca gcgagagtcg cgcctttttt acaaccgtga tcattccagc 120
cattgttggg gg                                     132
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<210> 120

<211> 132

<212> DNA

<213> Artificial Sequence

<220>

<223> Helicobacter pylori vacA nucleic acid sequence

<400> 120

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gccaaatgat ccatacaca gcgagagtcg cgcctttttc acaacygtga tcattccagc 120
cattgttggg gg                                     132
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<210> 121

<211> 132

<212> DNA

<213> Artificial Sequence

<220>

<223> Helicobacter pylori vacA nucleic acid sequence

<400> 121

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gccaaacgat ccatacaca gcgagagtcg cgcctttttc acaaccgtga tcattccagc 120
cattgttggg gg                                     132
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<210> 122

<211> 132

<212> DNA

<213> Artificial Sequence

<220>

<223> Helicobacter pylori vacA nucleic acid sequence

<400> 122

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gccaaacgat ccatacaca gcgagagtcg cgcctttttt acaaccgtga tcattccagc 120
cattgttggg gg                                     132
```

<210> 123
<211> 132
<212> DNA
<213> Artificial Sequence

<220>
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<400> 123
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gccaaatgat ccatacaca gcgagagtcg cgcctttttt acaaccgtga tcattccagc 120
cattgttggg gg 132

<210> 124
<211> 132
<212> DNA
<213> Artificial Sequence

<220>
<223> Helicobacter pylori vacA nucleic acid sequence

<400> 124
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gccaaatgat ccatacaca gcgagagtcg tgcttttttc acaaccgtga tcattccagc 120
cattgttggg gg 132

<210> 125
<211> 132
<212> DNA
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<220>
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<400> 125
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gccaaatgat ccatacaca gcgagagtcg cgcctttttc acaacgggga tcattccagc 120
cattgttggg gg 132

<210> 126
<211> 105
<212> DNA
<213> Artificial Sequence

<220>
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<400> 126
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tgctgccttc tttaacaacc tgatcattcc agccattgtt ggggg 105

<210> 127
<211> 105
<212> DNA
<213> Artificial Sequence

<220>
<223> Helicobacter pylori vacA nucleic acid sequence

<400> 127
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tgctgccttc tttacaaccg tgatcattcc agccattggt ggggg 105

<210> 128
<211> 105
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<400> 128
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<210> 129
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<212> DNA
<213> Artificial Sequence

<220>
<223> Helicobacter pylori vacA nucleic acid sequence

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tgccgccttc tttacaaccg tgatcattcc agccattggt ggggg 105

<210> 130
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tgccgccttc tttacaaccg tgatcattcc adccattggt ggggg 105

<210> 131
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tgccgccttc tttacaaccg tgatcattcc ggccattggt ggggg 105

<210> 132
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tgccgccttc tttacaaccg tgatcattcc agccattggt ggggg 105

<210> 133
<211> 105
<212> DNA
<213> Artificial Sequence

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tgccgccttc tttacaaccg tgatcattcc agccattgtt ggggg 105

<210> 134
<211> 105
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tgccgccttc ttcacaaccg tgatcattcc ggccattgtt ggggg 105

<210> 135
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tgccgccttc tttacaaccg tgattatccc ggccattgtt ggggg 105

<210> 136
<211> 105
<212> DNA
<213> Artificial Sequence

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<400> 136
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tgccgccttc tttacaaccg tgatcattcc agccattgtt gggag 105

<210> 137
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tgccgccttc tttacaaccg tgatcattcc agccattgtt ggagg 105

<210> 138
<211> 105
<212> DNA
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<220>
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tgccgccttc ttacaaccg tgaatattcc agcmattggt gggggg 105

<210> 139
<211> 105
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<220>
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<210> 140
<211> 105
<212> DNA
<213> Artificial Sequence

<220>
<223> Helicobacter pylori vacA nucleic acid sequence

<400> 140
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tgccgccttc ttacaaccg tgatcattcc agcmattggt gggggg 105

<210> 141
<211> 105
<212> DNA
<213> Artificial Sequence

<220>
<223> Helicobacter pylori vacA nucleic acid sequence

<400> 141
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tgccgccttc ttacaaccg tgatcattcc agccattggt gggggg 105

<210> 142
<211> 105
<212> DNA
<213> Artificial Sequence

<220>
<223> Helicobacter pylori vacA nucleic acid sequence

<400> 142
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<210> 143

<211> 105
 <212> DNA
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 <220>
 <223> Helicobacter pylori vacA nucleic acid sequence

 <400> 143
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 <210> 144
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 <213> Artificial Sequence

 <220>
 <223> Helicobacter pylori vacA nucleic acid sequence

 <400> 144
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 <210> 145
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 <220>
 <223> Helicobacter pylori vacA nucleic acid sequence

 <400> 145
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 tgccgccttt ttcacaaccg tgattattcc agccattggt tgggg 105

 <210> 146
 <211> 105
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Helicobacter pylori vacA nucleic acid sequence

 <400> 146
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 <210> 147
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 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Helicobacter pylori vacA nucleic acid sequence

 <400> 147
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 tgccgccttt ttcacaaccg tgatcattcc agccattggt ggggg 105

 <210> 148
 <211> 105

<212> DNA
<213> Artificial Sequence

<220>
<223> Helicobacter pylori vacA nucleic acid sequence

<400> 148
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tgccgccttt ttacaaccg taatcattcc agctattgtt gggggg 105

<210> 149
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<220>
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<400> 149
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tgccgccttt ttcacgaccg tgatcattcc agccattgtt gggggg 105

<210> 150
<211> 105
<212> DNA
<213> Artificial Sequence

<220>
<223> Helicobacter pylori vacA nucleic acid sequence

<400> 150
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tgccgccttt ttcacgaccg tgatcattcc agccattgtt gggggg 105

<210> 151
<211> 105
<212> DNA
<213> Artificial Sequence

<220>
<223> Helicobacter pylori vacA nucleic acid sequence

<400> 151
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tgccgccttt ttcacgaccg tgatcattcc agccattgtt gggggg 105

<210> 152
<211> 105
<212> DNA
<213> Artificial Sequence

<220>
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<400> 152
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tgccgccttt ttacaaccg tgatcattcc agccattgtt gggggg 105

<210> 153
<211> 105
<212> DNA

<213> Artificial Sequence

<220>

<223> Helicobacter pylori vacA nucleic acid sequence

<400> 153

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<210> 154

<211> 105

<212> DNA

<213> Artificial Sequence

<220>

<223> Helicobacter pylori vacA nucleic acid sequence

<221> misc_feature

<222> 27, 34, 53, 55, 76, 82

<223> n = A,T,C or G

<400> 154

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<210> 155

<211> 105

<212> DNA

<213> Artificial Sequence

<220>

<223> Helicobacter pylori vacA nucleic acid sequence

<400> 155

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<210> 156

<211> 105

<212> DNA

<213> Artificial Sequence

<220>

<223> Helicobacter pylori vacA nucleic acid sequence

<400> 156

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<210> 157

<211> 105

<212> DNA

<213> Artificial Sequence

<220>

<223> Helicobacter pylori vacA nucleic acid sequence

<400> 157

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<210> 158
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<213> Artificial Sequence

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<400> 158
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<210> 159
<211> 105
<212> DNA
<213> Artificial Sequence

<220>
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<400> 159
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tgccgccttt ttcacgaccg tgatcattcc agccattggt gggggg 105

<210> 160
<211> 105
<212> DNA
<213> Artificial Sequence

<220>
<223> Helicobacter pylori vacA nucleic acid sequence

<400> 160
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tgccgccttt ttcacgaccg tgatcattcc agccattggt gggggg 105

<210> 161
<211> 105
<212> DNA
<213> Artificial Sequence

<220>
<223> Helicobacter pylori vacA nucleic acid sequence

<400> 161
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tgccgccttt ttcacaaccg tgatcattcc agcvattgtg gggag 105

<210> 162
<211> 105
<212> DNA
<213> Artificial Sequence

<220>
<223> Helicobacter pylori vacA nucleic acid sequence

<400> 162
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tgccgccttt ttcacgaccg tgatcattcc agccattggt gggggg 105

<210> 163

<211> 105
<212> DNA
<213> Artificial Sequence

<220>
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<400> 163
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tgccgccttt ttcacgaccg tgatcattcc agccattggt gggggg 105

<210> 164
<211> 105
<212> DNA
<213> Artificial Sequence

<220>
<223> Helicobacter pylori vacA nucleic acid sequence

<400> 164
cccttttagtt tctctcgttt tagcaggagc gttgattagt gccataccgc aagagagtca 60
tgccgccttt ttcacgaccg tgatcattcc agccattggt gggggg 105

<210> 165
<211> 105
<212> DNA
<213> Artificial Sequence

<220>
<223> Helicobacter pylori vacA nucleic acid sequence

<400> 165
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tgccgccttt ttcacgaccg tgatcattcc agccattggt gggggg 105

<210> 166
<211> 105
<212> DNA
<213> Artificial Sequence

<220>
<223> Helicobacter pylori vacA nucleic acid sequence

<400> 166
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tgccgccttt ttcacaaccg tgatcattcc arccattggt gggggg 105

<210> 167
<211> 105
<212> DNA
<213> Artificial Sequence

<220>
<223> Helicobacter pylori vacA nucleic acid sequence

<400> 167
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tgccgccttt ttcacaaccg taatcattcc agccattggt gggggg 105

<210> 168
<211> 105

<212> DNA
<213> Artificial Sequence

<220>
<223> Helicobacter pylori vacA nucleic acid sequence

<400> 168
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tgccgccttt ttcacgaccg taatcattcc agccattggt gggggg 105

<210> 169
<211> 105
<212> DNA
<213> Artificial Sequence

<220>
<223> Helicobacter pylori vacA nucleic acid sequence

<221> misc_feature
<222> 82
<223> n = A,T,C or G

<400> 169
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tgccgccttt ttcacaaccg tnatcattcc agccattggt gggggg 105

<210> 170
<211> 105
<212> DNA
<213> Artificial Sequence

<220>
<223> Helicobacter pylori vacA nucleic acid sequence

<400> 170
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tgccgccttt ttcacacccg tgatcattcc agccattggt gggggg 105

<210> 171
<211> 105
<212> DNA
<213> Artificial Sequence

<220>
<223> Helicobacter pylori vacA nucleic acid sequence

<400> 171
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tgccgccttt ttcacaaccg tgatcattcc agccattggt gggggg 105

<210> 172
<211> 105
<212> DNA
<213> Artificial Sequence

<220>
<223> Helicobacter pylori vacA nucleic acid sequence

<400> 172
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tgccgccttt ttcacaaccg tgatcattcc agccattggt gggggg 105

<210> 173
<211> 105
<212> DNA
<213> Artificial Sequence

<220>
<223> Helicobacter pylori vacA nucleic acid sequence

<400> 173
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tgccgccttt ttcacaaccg tgatcattcc agccattggt ggggg 105

<210> 174
<211> 105
<212> DNA
<213> Artificial Sequence

<220>
<223> Helicobacter pylori vacA nucleic acid sequence

<400> 174
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tgccgccttt ttcacaaccg tgatcattcc agccattggt ggggg 105

<210> 175
<211> 105
<212> DNA
<213> Artificial Sequence

<220>
<223> Helicobacter pylori vacA nucleic acid sequence

<221> misc_feature
<222> 26, 27
<223> n = A,T,C or G

<400> 175
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tgccgccttt tttacaaccg tgatcattcc agccattggt ggggg 105

<210> 176
<211> 105
<212> DNA
<213> Artificial Sequence

<220>
<223> Helicobacter pylori vacA nucleic acid sequence

<221> misc_feature
<222> 82, 101, 102, 103, 104
<223> n = A,T,C or G

<400> 176
cccttttagtt tctcttggtt tagcaggagc gttgattagc gccataccgc aacaaagtca 60
tgccgccttt ttcacgaccg tnatcattcc agccattggt nnnng 105

<210> 177
<211> 105
<212> DNA
<213> Artificial Sequence

<220>
 <223> Helicobacter pylori vacA nucleic acid sequence

<400> 177
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 tgccgccttt ttcacgaccg tgatcattcc agccattggtt gggggg 105

<210> 178
 <211> 105
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Helicobacter pylori vacA nucleic acid sequence

<400> 178
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<210> 179
 <211> 105
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Helicobacter pylori vacA nucleic acid sequence

<400> 179
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<210> 180
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 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Helicobacter pylori vacA nucleic acid sequence

<400> 180
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<210> 181
 <211> 105
 <212> DNA
 <213> Artificial Sequence

<220>
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<400> 181
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 tgccgccttt tttacaaccg tgatcattcc agccattggtt ggagg 105

<210> 182
 <211> 105
 <212> DNA
 <213> Artificial Sequence

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<220>
<223> Helicobacter pylori vacA nucleic acid sequence

<400> 182
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tgccgccttt ttcacgaccg tgatcattcc agccattgtt gggggg 105

<210> 183
<211> 105
<212> DNA
<213> Artificial Sequence

<220>
<223> Helicobacter pylori vacA nucleic acid sequence

<400> 183
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tgccgccttt ttcacaaccg tgatcattcc agccattgtt gggggg 105

<210> 184
<211> 105
<212> DNA
<213> Artificial Sequence

<220>
<223> Helicobacter pylori vacA nucleic acid sequence

<400> 184
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tgccgccttt ttcacaaccg tgatcattcc agccattgtg gggggg 105

<210> 185
<211> 105
<212> DNA
<213> Artificial Sequence

<220>
<223> Helicobacter pylori vacA nucleic acid sequence

<400> 185
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tgccgccttt ttcacaaccg tgatcattcc agccattgtt gggggg 105

<210> 186
<211> 105
<212> DNA
<213> Artificial Sequence

<220>
<223> Helicobacter pylori vacA nucleic acid sequence

<221> misc_feature
<222> 7, 27, 34, 55, 82
<223> n = A,T,C or G

<400> 186
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tgccgccttt ttcacaaccg tnatcattcc agccattgtt gggggg 105

<210> 187
<211> 105

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<212> DNA

<213> Artificial Sequence

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<223> Helicobacter pylori vacA nucleic acid sequence

<400> 187

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tgccgccttt attacaaccg tgatcattcc agccattgtt gggggg                      105
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<210> 188

<211> 105

<212> DNA

<213> Artificial Sequence

<220>

<223> Helicobacter pylori vacA nucleic acid sequence

<400> 188

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tgccgccttt tttacaaccg tgattattcc agccattgtg gggggg                      105
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<210> 189

<211> 105

<212> DNA

<213> Artificial Sequence

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<400> 189

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<210> 190

<211> 105

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<223> Helicobacter pylori vacA nucleic acid sequence

<400> 190

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tgccgccttt tttacaaccg tgattattcc agccattgtg gggggg                      105
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<210> 191

<211> 105

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<213> Artificial Sequence

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<400> 191

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<210> 192

<211> 105

<212> DNA

<213> Artificial Sequence

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<223> Helicobacter pylori vacA nucleic acid sequence

<400> 192

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tgccgccttt ttyacraccg tgatcattcc agccattggt ggrggg 105
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<210> 193

<211> 105

<212> DNA

<213> Artificial Sequence

<220>

<223> Helicobacter pylori vacA nucleic acid sequence

<400> 193

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tgccgccttt ttcacaaccg tgttcattcc agccattggt gggggg 105
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<210> 194

<211> 362

<212> DNA

<213> Artificial Sequence

<220>

<223> Helicobacter pylori vacA nucleic acid sequence

<400> 194

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agagtgaatg gccatagcgc tcatttttaa aatattgatg ccacaaagag cgataacggg 120
ctaaacacta gcactttgga ttttagcggc gttacagaca aagtcaatat caacaagctc 180
actacatctg ccactaatgt gaacattaaa aactttgaca ttaaggaatt agtggttacg 240
accogtggtc agagttttgg gcaatacact atttttggcg aaaatatagg cgataagtct 300
cgcattggtg tcgttagttt gcaaactggc tatagcccgg cctattctgg gggcgttact 360
tt 362
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<210> 195

<211> 362

<212> DNA

<213> Artificial Sequence

<220>

<223> Helicobacter pylori vacA nucleic acid sequence

<400> 195

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agagtgaatg gccatagcgc tcatttttaa aatattgatg ccacaaagag cgataacggg 120
ctaaacacta gtgctttgga tttgagcggc gttacagaca aagtcaatat caacaagctc 180
actacatctg ccactaatgt gaacattaaa aactttgaca ttaaggaatt agtggttaca 240
accogtggtc agagttttgg gcaatacact atttttggcg aaaatatagg cgataagtcg 300
cacattggtg tcgttagttt gcaaacggga tatagcccgg cctattctgg gggcgttact 360
tt 362
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<210> 196

<211> 362

<212> DNA

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<223> Helicobacter pylori vacA nucleic acid sequence

<400> 196

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ctaaacacta gcgcttttga tttgagcggc gttacagaca aagtcaatat caacaagctc 180
actacatctg ccactaatgt gaacgttaaa aactttgaca ttaaggaatt ggtgggttaca 240
acccgagttc aaagtttttg gcaatacact atttttggcg aaaatatagg cgataagtcg 300
cgcattgggtg tcgttagttt gcaaacggga tatagcccgg cctattcttg gggcgttact 362
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<210> 197

<211> 362

<212> DNA

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<223> Helicobacter pylori vacA nucleic acid sequence

<400> 197

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ctaaacacta gcgcttttga tttgagcggc gttacagaca aagtcaatat caacaagctc 180
actacatctg ccactaatgt gaacgttaaa aactttgaca ttaaggaatt ggtgggttaca 240
acccgagttc aaagtttttg gcaatacact atttttggcg aaaatatagg cgataagtcg 300
cgcattgggtg tcgttagttt gcaaacggga tatagcccgg cctattcttg gggcgttact 362
tt
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<210> 198

<211> 362

<212> DNA

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<220>

<223> Helicobacter pylori vacA nucleic acid sequence

<400> 198

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ctaaacacta gcgcttttga tttcagcggc gttacagata aagtcaatat caacaagctc 180
actacatctg ccactaacgt gaacattaaa aactttgaca ttaaggaatt ggtgggttaca 240
acccgagttc aaagtttttg gcaatacact atttttggcg aaaatatagg cgataagtc 300
cgcattgggtg tcgtgagttt gcaaacggga tatagcccgg cctattcttg gggcgttact 362
tt
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<210> 199

<211> 362

<212> DNA

<213> Artificial Sequence

<220>

<223> Helicobacter pylori vacA nucleic acid sequence

<400> 199

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ctaaacacta gcacttttga ttttagcggc gttacagaca aagtcaatat caacaagctc 180
actacatctg ccactaatgt gaacgttaaa aactttgaca ttaaggaatt ggtgggttaca 240
acccgagttc aaagtttttg gcaatacact atttttggcg aaaatatagg cgatcagtc 300
cgcattgggtg tcgtgagttt gcaaacggga tatagcccgg cttattcttg gggcgttact 362
tt
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<210> 200
<211> 362
<212> DNA
<213> Artificial Sequence

<220>
<223> Helicobacter pylori vacA nucleic acid sequence

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ctaaacacta gcgcttttga ttttagcggc gttacagaca aagtcaatat caacaagctc 180
actacatctg ccactaatgt gaacattaaa aactttgaca ttaaggaatt ggtgggttaca 240
acccgagttc aaagtttttg gcaatacact atttttggcg aaaatatagg cgataagtct 300
cgcattggtg tcgtgagttt gcaaacggga tatagcccgg cctattcttg gggcgttact 360
tt 362

<210> 201
<211> 2
<212> DNA
<213> Artificial Sequence

<220>
<223> Helicobacter pylori vacA nucleic acid sequence

<400> 201
wc

2

<210> 202
<211> 362
<212> DNA
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<220>
<223> Helicobacter pylori vacA nucleic acid sequence

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ctaaacacta gtgcttttga ttttagcggc gttacagaca aagtcaatat caacaagctc 180
actacatctg ccactaatgt gaacattaaa aactttgaca ttaaggaatt agtgggttaca 240
acccgagttc aaagtttttg gcaatacact atttttggcg aaaatatagg cgataagtct 300
cgcattggtg tcgtgagttt gcaaacggga tatagcccgg cctattcttg gggcgttact 360
tt 362

<210> 203
<211> 362
<212> DNA
<213> Artificial Sequence

<220>
<223> Helicobacter pylori vacA nucleic acid sequence

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agagtgaatg gccatagcgc tcatttttaa aatattgatg ccagcaagag cgataacggg 120
ctaaacacta gtgcttttga ttttagcggc gttacagaca aagtcaatat caacaagctc 180
actacatctg ccactaatgt gaacattaaa aactttgaca ttaaggaatt agtgggttaca 240
acccgagttc aaagtttttg gcaatacact atttttggcg aaaatatagg cgataagtct 300
cgcattggtg tcgtgagttt gcaaacggga tatagcccgg cctattcttg gggcgttact 360

tt

362

<210> 204
<211> 362
<212> DNA
<213> Artificial Sequence

<220>
<223> Helicobacter pylori vacA nucleic acid sequence

<400> 204
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ctaaacacta gtgcttttga ttttagcggc gttacagaca aagtcaatat caacaagctc 180
actacatctg ccactaatgt gaacattaaa aactttgaca ttaaggaatt agtggttaca 240
acccgagttc aaagtttttg gcaatacact atttttggcg aaaatatagg cgataagtct 300
cgcattggtg tcgtgagttt gcaaacggga tatagcccgg cctattcttg gggcgttact 360
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<212> DNA
<213> Artificial Sequence

<220>
<223> Helicobacter pylori vacA nucleic acid sequence

<400> 205
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agagtgaatg cccatagcgc tcattttaaa aatattgatg ccagcaagag cgataacggg 120
ctaaacacta gtgcttttga ttttagcggc gttacagaca aagtcaatat caacaagctc 180
actacatctg ccactaatgt gaacattaaa aactttgaca ttaaggaatt agtggttaca 240
acccgagttc aaagtttttg gcaatacact atttttggcg aaaatatagg cgataagtct 300
cgcattggtg tcgtgagttt gcaaacggga tatagcccgg cctattcttg gggcgttact 360
tt 362

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ctaaacacta gcgcttttga ttttagtggc gttacagaca aagtcaatat caacaagctc 180
actacatctg ccactaatgt gaacattaaa aactttgaca ttaaggaatt agtggttaca 240
acccgagttc aaagtttttg gcaatacact atttttggcg aaaatatagg cgataagtct 300
cgcattggtg tcgttagttt gcaaacggga tatagcccag cctattcttg gggcgttact 360
tt 362

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<213> Artificial Sequence

<220>
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ctaaacacta gtgcttttga ttttagcggc gttacagaca aagtcaatat caacaagctc 180
actacatctg ccactaatgt gaacattaaa aactttgaca ttaaggaatt agttgttaca 240
acccgagttc aaagttttgg gcaatacact atttttggcg aaaatatagg cgataagtct 300
cgcattgggtg tcgttagttt gcaaacggga tatagcccag cctattctgg gggcgttact 360
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<210> 208
<211> 362
<212> DNA
<213> Artificial Sequence

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<220>
<223> Helicobacter pylori vacA nucleic acid sequence

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<400> 208
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aaagtgaatg gccatagcgc tcatttttaa aatattgatg ccagtaagag cgataatggt 120
ctaaacacta gcgcttttga ttttagcggc gttacagaca aagtcaatat caacaagctc 180
actacatctg ccactaatgt gaacattaaa aactttgaca ttaaggaatt agtggttaca 240
acccgtgttc agagttttgg gcaatacact atttttggcg aaaatatagg cgataagtct 300
cgcattgggtg tcgttagttt gcaaatggga tatagcccgg cctattctgg gggcgttact 360
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<210> 209
<211> 362
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<220>
<223> Helicobacter pylori vacA nucleic acid sequence

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aaagtgaatg gccatagcgc tcatttttaa aatattgatg ccagtaagag cgataacggg 120
ctaaacacta gcgcttttga tttgagcggc gttacagaca aagtcaatat caacaagctc 180
actacagctg ccactaatgt gaacattaaa aactttgaca ttaaggaatt ggttgttacg 240
acccgtgttc agagttttgg acaatacact atttttggcg aaaatatagg cgataagtct 300
cgcattgggtg tcgttagttt gcaaacggga tatagcccgg cttattctgg gggcgttact 360
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<210> 210
<211> 362
<212> DNA
<213> Artificial Sequence

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<220>
<223> Helicobacter pylori vacA nucleic acid sequence

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<400> 210
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ctaaacacta gctcttttga tttcagtggc gttacagaca aagtcaatat caacaagctc 180
actacatctg ccactaatgt gaacgttaaa aactttgaca ttaaggaatt ggttggttaca 240
acccgagttc agagttttgg gcaatacact atttttggcg aaattatagg cgataagtct 300
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<210> 211

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<211> 362
<212> DNA
<213> Artificial Sequence

<220>
<223> Helicobacter pylori vacA nucleic acid sequence

<400> 211
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ctaaacacta gtgcttttga ttttagcggc gttacagata aagtcaatat caacaagctc 180
actacatctg ccactaatgt gaacgttaaa aactttgaca ttaaggaatt ggtggttaca 240
acccgagttc aaagtttttg gcaatacact atttttggcg aaaatatagg cgataagtct 300
cgcattgggtg tcgttagttt gcaaacggga tatagcccgg cctattctgg gggcgttact 360
tt 362

<210> 212
<211> 362
<212> DNA
<213> Artificial Sequence

<220>
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<400> 212
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ctaaacacta ggcgttttga tttgagtggc gttacagaca aagtcaatat caacaagctc 180
actacatctg ccactaatgt gaacattaaa aactttgaca ttaaggaatt agtggttaca 240
acccgtgttc agagtttttg gcaatacact atttttggcg aaaatatagg cgataagtct 300
cgcattgggtg tcgttagttt gcaaacggga tatagcccgg cctattctgg gggcgttact 360
tt 362

<210> 213
<211> 362
<212> DNA
<213> Artificial Sequence

<220>
<223> Helicobacter pylori vacA nucleic acid sequence

<400> 213
gtggatgctc atacagctta ttttaatggc aatattttatc tgggaaaatc cacgaattta 60
aaagtgaatg gccatagcgc tcatttttaa aatattgatg ccagtaagag cgataatggt 120
ctaaacacta gtgcttttga tttgagcggc gttacagaca aagtcaatat caacaagctc 180
actacagctg ccactaatgt gaacattaaa aactttgaca ttaaggaatt agtggttacg 240
acccgtgttc agagtttttg gcaatacact atttttggcg aaaatatagg agatcaatcg 300
cgcattgggtg tcgttagttt gcaaactggc tatagcccgg cctattctgg gggcgttact 360
tt 362

<210> 214
<211> 362
<212> DNA
<213> Artificial Sequence

<220>
<223> Helicobacter pylori vacA nucleic acid sequence

<400> 214
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aaagtgaatg gccatagcgc tcatttttaa aatattgatg ccactaagag cgataatggt 120

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ctaaacacta gcgcttttga tttgagcggc gttacaaaca aggtcaatat caacaagctc 180
actacagctg ccactaatgt gtccattaaa aacttttgaca ttaaggaatt agtgggttacg 240
acccgtgttc agagtttttg gcaatacact atttttggcg aaaatatagg cgatcaatcg 300
cgcattggtg tcgttagttt gcaaactggc tatagcccgg cctattcttg gggcgttact 360
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<210> 215
<211> 362
<212> DNA
<213> Artificial Sequence

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<220>
<223> Helicobacter pylori vacA nucleic acid sequence

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<400> 215
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agagtgaatg gccatagcgc tcattttaaa aatattgatg ccagtaagag cgataacggg 120
ctaaacacta gcgcttttga ttttagcggc gttacagaca aagtcaatat caacaagctc 180
actacatctg ccactaatgt gaacattaaa aactttgaca ttaaggaatt ggtgggttaca 240
acccgtgttc agagtttttg gcaatacact atttttggcg aaaatatagg cgataagtct 300
cgcattggtg tcgttagttt gcaaacggga tatagcccgg cctattcttg gggcgttact 360
tt

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<210> 216
<211> 362
<212> DNA
<213> Artificial Sequence

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<220>
<223> Helicobacter pylori vacA nucleic acid sequence

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<400> 216
gtggatgctc atacagctta ttttaatggc aatgtttatc tgggaaaatc cacgaattta 60
agagtgaatg gccatagcgc tcattttaaa aatattgatg ccagcaagag cgataacggg 120
ctaaacacta gcgcttttga ttttagcggc gttacagata aagtcaatat caacaagctc 180
actacatctg ccactaatgt gaacattaaa aactttgaca ttaaggaatt agtgggttaca 240
acccgtgttc agagtttttg gcaatacact atttttggcg aaaatatagg cgataagtct 300
cgcattggtg tcgtgagttt gcaaacggga tatagcccgg cctattcttg gggcgttact 360
tt

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<210> 217
<211> 362
<212> DNA
<213> Artificial Sequence

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<220>
<223> Helicobacter pylori vacA nucleic acid sequence

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<400> 217
gtggatgctc atacagctta ttttaatggc aatgtttatc tgggaaaatc cacgaattta 60
agagtgaatg gccatagcgc tcattttaaa aatattgatg ctagtaagag cgataacggg 120
ctaaacacta gcgcttttga ttttagcggc gttacagaca aagtcaatat caacaagctc 180
actacatctg ccactaatgt gaacgttaaa aactttgaca ttaaggaatt agtgggttaca 240
acccgtgttc agagtttttg gcaatacact atttttggcg aaaatatagg cgataagtct 300
cgcattggtg tcgtgagttt gcaaacggga tatagcccag cctattcttg gggcgttact 360
tt

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<210> 218
<211> 362
<212> DNA
<213> Artificial Sequence

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<220>

<223> Helicobacter pylori vacA nucleic acid sequence

<400> 218

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agagtgaatg gccatagcgc tcatttttaaa aatattgatg ccagcaagag cgataacggg 120
ctaaacacta gcgcttttga tttcagcggc gttacagaca aagtcaatat caacaagctc 180
actacatctg ccactaatgt gaacgttaaa aactttgacg ttaaggaatt ggtgggttaca 240
acccgtgttc agagtttttg gcaatacact atttttggcg aaaatatagg cgataagtct 300
cgcattgggtg tcgtgagttt gcaaacggga tatagcccgg cctattctgg gggcgttact 360
tt 362
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<210> 219

<211> 362

<212> DNA

<213> Artificial Sequence

<220>

<223> Helicobacter pylori vacA nucleic acid sequence

<400> 219

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gtggatgctc atacagctta ttttaatggc aatattttatc tgggaaaatc cacgaattta 60
agagtgaatg gccatagcgc tcatttttaaa aatattgatg ccagcaagag cgataacggg 120
ctaaacacta gcacttttga ttttagcggc gttacagata aagtcaatat caacaagctc 180
actacagctg ccactaatgt gaacgttaaa aactttgaca ttaaggaatt agtgggttaca 240
acccgagttc aaagtttttg gcaatacact atttttggcg aaaatatagg cgataagtct 300
cgcattgggtg tcgttagttt gcaaacggga tatagcccgg cctattctgg gggcgttact 360
tt 362
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<210> 220

<211> 362

<212> DNA

<213> Artificial Sequence

<220>

<223> Helicobacter pylori vacA nucleic acid sequence

<400> 220

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gtggatgctc atacagctta ttttaatggc aatattttatt tgggaaaatc cacgaattta 60
agagtgaatg gccatagcgc tcatttttaaa aatattgatg ccagtaagag cgataacggg 120
ctaaacacta gcgcttttga ttttagcggc gttacagaca aagtcaatat caacaagctc 180
actacatctg ccactaatgt gaacgttaaa aactttgaca ttaaggaatt agtgggttaca 240
acccgtgttc agagtttttg gcaatacact atttttggcg aaaatatagg cgataagtct 300
cgcattgggtg tcgttagttt gcaaacggga tatagcccgg cctattctgg gggcgttact 360
tt 362
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<210> 221

<211> 362

<212> DNA

<213> Artificial Sequence

<220>

<223> Helicobacter pylori vacA nucleic acid sequence

<400> 221

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agagtgaatg gccatagcgc tcatttttaaa aatattgatg ccagtaagag cgataacggg 120
ctaaacacta gtgcttttga ttttagcggc gttacagata aagtcaatat caacaagctc 180
actacatctg ccactaatgt gaacgttaaa aactttgaca ttaaggaatt ggtgggttaca 240
acccgagttc aaagtttttg gcaatacact atttttggcg aaaatatagg cgataagtct 300
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cgcattggtg tcgtagttt gcaaacggga tatagcccgg cctattctgg gggcggttact 360
tt 362

<210> 222
<211> 362
<212> DNA
<213> Artificial Sequence

<220>
<223> Helicobacter pylori vacA nucleic acid sequence

<400> 222
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agattgaatg gccatagcgc tcatttttaa aatattgatg ccagtaagag cgataacggg 120
ctaaacacta gcgctttgga ttttagcggc gttacagaca aagtcaatat caacaagctc 180
actacatctg ccactaatgt gaacgttaaa aactttgaca ttaaggaatt ggtgggttaca 240
acccgagttc agagtttttg gcaatactct atttttggcg aaaatatagg cgataagtcg 300
cgcattggtg tcgtagttt gcaaacggga tatagcccgg cctattctgg gggcggttact 360
tt 362

<210> 223
<211> 362
<212> DNA
<213> Artificial Sequence

<220>
<223> Helicobacter pylori vacA nucleic acid sequence

<400> 223
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agagtgaatg gccatagcgc tcatttttaa aatattgatg ccacaaagag cgataacggg 120
ctaaacacta gcacttttga tttgagcggc gttacagaca aagtcaatat caacaagctc 180
actacatctg ccactaatgt gaacattaaa aactttgaca ttaaggaatt agtgggttacg 240
acccgtgttc agagtttttg gcaatacact atttttggcg aaaatatagg cgataagtc 300
cgcattggtg tcgtgagttt gcaaacggga tatagcccgg cctattctgg gggcggttact 360
tt 362

<210> 224
<211> 362
<212> DNA
<213> Artificial Sequence

<220>
<223> Helicobacter pylori vacA nucleic acid sequence

<400> 224
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agagtgaatg gccatagcgc tcatttttaa aatattgatg ccacaaagag cgataacggg 120
ctaaacatta gcacttttga ttttagcggc gttacagaca aagtcaatat caacaagctc 180
actacatctg ccactaatgt gaacattaaa aactttgaca ttaaggaatt agtgggttaca 240
acccgtgttc agagtttttg gcaatacact atttttggcg aaaatatagg cgataagtc 300
cgcattggtg tcgtagttt gcaaacggga tatagcccgg cctattctgg gggcggttact 360
tt 362

<210> 225
<211> 362
<212> DNA
<213> Artificial Sequence

<220>
<223> Helicobacter pylori vacA nucleic acid sequence

<400> 225
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agagtgaatg gccataacgc tcatttttaaa aatattgatg ccagtaagag cgataacggg 120
ctaaacacta gcacttttga tttgagcggc gttacagaca aagtcaatat caacaagctc 180
actacagctg ccactaatgt gaacattaaa aactttgaca ttaaggaatt agtgggttacg 240
accctgtgtc agagtttttg gcaatacact atttttggcg aaaatatagg tgataagtct 300
cgcattggtg tcgtagttt gcaaacggga tatagcccg cctattcttg gggcgttact 360
tt 362

<210> 226
<211> 362
<212> DNA
<213> Artificial Sequence

<220>
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<400> 226
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agagtgaatg gccatagcgc tcatttttaaa aatattgatg ccagtgaagag cgataacggg 120
ctaaacacta gcgcttttga ttttagcggc gttacagaca aagtcaatat caacaagctc 180
actacatctg ccactaatgt gaacgtttaa aactttgaca ttaaggaatt ggtgggttacg 240
accctgtgtc agagtttttg gcaatacact atttttggcg aaaatatagg cgataagtct 300
cgcattggtg tcgtagttt gcaaacggga tgcgcccgg cctgttcttg gggcgttact 360
tt 362

<210> 227
<211> 362
<212> DNA
<213> Artificial Sequence

<220>
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<400> 227
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agagtgaatg gccatagcgc tcatttttaaa aatattgatg ccagtaagag cgataacggg 120
ctaaacacta gcgytttga ttttagcggc gttacagaya aagtcaatat caacaagctc 180
actacatctg ccactaatgt gaacrtaaa aactttgaya ttaaggaatt ggtgggttaca 240
acccgagttc aaagtttttg gcaatacact atttttggcg aaaatatagg cgatmagtct 300
cgcattggtg tcgtagttt gcaaacggga tatagccrg cctattcttg gggcgttact 360
tt 362

<210> 228
<211> 362
<212> DNA
<213> Artificial Sequence

<220>
<223> Helicobacter pylori vacA nucleic acid sequence

<400> 228
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agagtgaatg gccatagcgc tcatttttaaa aatattgatg ccacaaagag cgataatggt 120
ataaacacta gcacttttga tttgagcggc gttacagaca aggtcaatat caacaagctc 180
attacagctt ccactaatgt gaacattaaa aactttgaca ttaaggaatt ggtgggttaca 240
accctgtgtc aaagtttttg gcaatacact atttttggcg aaaatatagg cgataagtct 300
cgcattggtg tcgtagttt gcaaacggga tatagcccg cctattcttg gggcgttact 360
tt 362

<210> 229
<211> 362
<212> DNA
<213> Artificial Sequence

<220>
<223> Helicobacter pylori vacA nucleic acid sequence

<400> 229
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agagtgaatg gccatagcgc tcatttttaa aatattgatg ccagcaagag cgataacggg 120
ctaaacacta gcaccttgga ttccagtggc gttacagaca aagtcaatat caacaagctc 180
actacatctg ccactaatgt gaacgttaaa aactttgata ttaaggaatt ggtgggttaca 240
acccgagttc agagttttgg gcaatacact atttttggcg aaaatatagg cgataagtcg 300
cgcattggtg tcgtgagttt gcaaacggga tatagcccag cttattctgg gggcggttact 360
tt 362

<210> 230
<211> 362
<212> DNA
<213> Artificial Sequence

<220>
<223> Helicobacter pylori vacA nucleic acid sequence

<400> 230
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agagtgaatg gccatagcgc tcatttttaa aatattgatg ccagtaagag cgataacggg 120
ctaaacacta gcgctttgga ttttagcggc gttacagaca aagttaatat caacaagctc 180
actacatctg ccactaatgt gaacgttaaa aactttgaca ttaaggaatt ggtgggttaca 240
acccgagttc aaagttttgg gcaatacact atttttggcg aaaatatagg cgataagtct 300
cgcattggtg tcgtgagttt gcaaacggga tatagccctg cttattctgg gggcggttact 360
tt 362

<210> 231
<211> 362
<212> DNA
<213> Artificial Sequence

<220>
<223> Helicobacter pylori vacA nucleic acid sequence

<400> 231
gtggatgctc atacagctta ttttaatggc aatatttatc tgggaaaatc cacgaattta 60
agagtgaatg gccatagcgc tcatttttaa aatattgatg ccagtaagag cgataacggg 120
ctaaacacta ccactttgga ttccagcggc gttacagata aagtcaatat caacaagctc 180
actacatctg ccactaatgt gaacattaaa aactttgaca ttaaggaatt agtgggttaca 240
acccgagttc agagttttgg gcaatacact atttttggcg aaaatatagg cgataagctg 300
cacattggtg tcgtgagttt gcaaacggga tatagcccag cctattctgg gggcggttact 360
tt 362

<210> 232
<211> 362
<212> DNA
<213> Artificial Sequence

<220>
<223> Helicobacter pylori vacA nucleic acid sequence

<400> 232
gtggatgctc atacagctta ttttaatggc aatatttatc tgggaaaatc cacgaattta 60

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aaagtgaatg gccatagcgc tcatttttaa aatattgatg ctagtaagag cgataacggg 120
ctaaacacta gcgcttttga tttgagcggc gttacaaaca aggtcaatat caacaagctc 180
actacagctg ccactaatgt gaacattaaa aactttgaca ttaaggaatt ggtggttaca 240
acccgcgttc agagtttttg gcaatacact atttttggcg aaaatatagg cgataagtcg 300
cgcattgggtg tcgttagttt gcaaactggc tatagcccg cctattcttg gggcgttact 360
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<210> 233
<211> 362
<212> DNA
<213> Artificial Sequence

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<220>
<223> Helicobacter pylori vacA nucleic acid sequence

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<400> 233
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aaagtgaatg gccatagcgc tcatttttaa aatattgatg ccactaagag cgataatggg 120
ctaaacacta gcgcttttga tttgagcggc gttacaaaca aggtcaatat caacaagctc 180
actacagctg ccactaatgt gtccattaaa aactttgaca ttaaggaatt agtggttacg 240
acccgtgttc agagtttttg gcaatacact atttttggcg aaaatatagg cgatcaatcg 300
cgcattgggtg tcgttagttt gcaaactggc tatagcccg cctattcttg gggcgttact 360
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<210> 234
<211> 362
<212> DNA
<213> Artificial Sequence

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<220>
<223> Helicobacter pylori vacA nucleic acid sequence

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<400> 234
gtggatgctc atacagctta ttttaatggc aatatttatc tgggaaaatc cacgaattta 60
aaagtgaatg gccatagcgc tcatttttaa aatattgatg ccactaagag cgataatggg 120
ctatacacta gcgcttttga tttgagcggc gttacaaaca aggtcaatat taacacgctc 180
actacagctg ccactaatgt gtccattaaa aactttgaca ttaaggaatt agtggttacg 240
acccgtgttc agagtttttg gcaatacact atttttggcg aaaatatagg cgatcaatcg 300
cgcattgggtg tcgttagttt gcaaactggc tatagcccg cctattcttg gggcgttact 360
tt

```

```

<210> 235
<211> 362
<212> DNA
<213> Artificial Sequence

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<220>
<223> Helicobacter pylori vacA nucleic acid sequence

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<400> 235
gtggatgcc atacgatcaa ttttaatggc aatatgtatt tgggaagatt tacgcattta 60
aaagtgaatg gtcatacagc caatttttaa gatattgatg ccagcaaggg tagaaatggg 120
atcgacacca ccatttttga ttttagcggc gttacaaaca aggtcaatat caacaagctc 180
accacagctg ccactaatgc ggccattaaa aattttgaca ttaaggaatt ggttgttaca 240
accaatgttt tgagtgtggg gaaatacact gattttaccg aagatatagg cgatcaatcc 300
cgcattggta tcgtgcgttt gcaaatggga tatagcccg cctattcttg gggcgttact 360
tt

```

```

<210> 236
<211> 362
<212> DNA

```

<213> Artificial Sequence

<220>

<223> Helicobacter pylori vacA nucleic acid sequence

<400> 236

```
gtggatgccc atacgatcaa ttttaatggc aatatgtatt tgggaagatt cacgcattta 60
aaagtgaatg gtcatacagc caattttaaa gatattgatg ccagcaaggg tagaaatggg 120
atcgacacca ccatttttga ttttagcggc gttacaaaca aggtcaatat caacaagctc 180
accacagctg ccactaatgc ggccattaaa aattttgaca ttaaggaatt gggtgttaca 240
accaatgttt tgagtgtggg gaaatacact gattttaccg aagatatagg cgatcaatcc 300
cgcattggta tcgttagttt gcaaacggga tatagcccgg cctattctgg gggcgttact 360
tt
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<210> 237

<211> 362

<212> DNA

<213> Artificial Sequence

<220>

<223> Helicobacter pylori vacA nucleic acid sequence

<400> 237

```
gtggatgccc atacgatcaa ttttaatggc aacatgtatt tgggaagatt cacgcattta 60
aaagtgaatg gccatacagc caattttaaa gatattgatg ccagcaaggg tagaaatggg 120
atcgacacca ctatttttga ttttagcggc gttacagaca aagtcaatat caacaagctc 180
actacagctg ccactaatgt gtccattaaa aactttgaca ttaaggaatt gggtgttaca 240
accaatgttt tgagtgtggg gaaatacact gattttaccg aagatatagg cgatcaatcg 300
cacattgggtg tcgttagttt gcaaactggc tatagcccgg tctattctgg gggcgttact 360
tt
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<210> 238

<211> 288

<212> DNA

<213> Artificial Sequence

<220>

<223> Helicobacter pylori vacA nucleic acid sequence

<400> 238

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gtggatgctc atacagctaa ttttaaaggc attgatacgg gtaatggtgg tttcaacacc 60
ttagatttta gtggtgttac aggtaaggct aatatcaaca agctcattac ggcttcact 120
aatgtggccg ctaaaaactt caacattaat gaattgattg ttaaaaccaa tgggggtgagt 180
gtgggggaat acactcattt tagcgaagat ataggcagtc aatcgcgcat caataccgtg 240
cgtttggaat ctggcactag gtcaatctat tctggcgggtg ttaaattt 288
```

<210> 239

<211> 288

<212> DNA

<213> Artificial Sequence

<220>

<223> Helicobacter pylori vacA nucleic acid sequence

<400> 239

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gtggatgctc atacagctaa ttttaaaggc attgatacgg gtaatggtgg tttcaacacc 60
ttagatttta gtggtgttac aggtaaggct aatatcaaca agctcatcac agcttcact 120
aatgtggccg ttaaaaactt caacattaat gaattgattg ttaaaaccaa tgggtgtgagt 180
gtgggggaat acactcattt tagcgaagat ataggcagtc aatcgcgcat caataccgtg 240
cgtttggaat ctggcactag gtcaatcttt tctgggggtg ttaaattt 288
```


<210> 240
<211> 288
<212> DNA
<213> Artificial Sequence

<220>
<223> Helicobacter pylori vacA nucleic acid sequence

<400> 240
gtggatgctc atacagctaa ttttaaaggt attgatacgg gtaatggtgg tttcaacacc 60
ttagattttta gtggtgttac aggtaaggtc aatatcaaca agctcatcac agcttccact 120
aatgtggccg ttaaaaactt caacattaat gaattgattg ttaaaaccaa tgggataagt 180
gtgggggaat acactcattt tagcgaagat ataggaagtc aatcgcgcat caataccgtg 240
cgtttggaat ctggcactag atcaatcttt tctgggggtg ttaaattt 288

<210> 241
<211> 288
<212> DNA
<213> Artificial Sequence

<220>
<223> Helicobacter pylori vacA nucleic acid sequence

<400> 241
gtggatgctc atacagctaa ttttaaaggt attgatacgg gcaatggtgg tttcaacacc 60
ttagattttta gtggcgttac agacaaggtc aatatcaaca agctcattac agcttccact 120
aatgtggcca ttaaaaactt caacattaat gaattgttgg ttaagaccaa tggggtgagc 180
gtgggggaat acactcattt tagcgaagat ataggcagtc aatcgcgcat caataccgtg 240
cgtttggaat ctggcactag gtcaatcttt tctgggggtg tcaaattt 288

<210> 242
<211> 288
<212> DNA
<213> Artificial Sequence

<220>
<223> Helicobacter pylori vacA nucleic acid sequence

<400> 242
gtggatgctc atacagctaa ttttaaaggt attgatacgg gtaatggtgg tttcaacacc 60
ttagattttta gtggcgttac agacaaggtc aatatcaaca agctcattac agcttccact 120
aatgtggcca ttaaaaactt caacattaat gaattggttg ttaagaccaa tggggtgagt 180
gtgggggaat acactcattt tagcgaagat ataggcagtc aatcgcgcat caacaccgtg 240
cgtttggaat ctggcactag gtcaatctat tctgggggtg ttaaattt 288

<210> 243
<211> 288
<212> DNA
<213> Artificial Sequence

<220>
<223> Helicobacter pylori vacA nucleic acid sequence

<400> 243
gtggatgctc atacagctaa ttttaaaggt attgatacgg gtaatggtgg tttcaacacc 60
ttagattttta gtggtgttac aggtaaggtc aatatcaaca agctcatcac ggcttccact 120
aatgtggccg ttaaaaacaa caacattaat gaattggtgg ttaaaaccaa tgggataagt 180
gtgggggaat acactcattt tagcgaagat ataggcagtc aatcgcgcat caataccgtg 240
cgtttggaat caggcactag gtcaatcttt tctgggggtg tcaaattt 288

<210> 244

<211> 288
<212> DNA
<213> Artificial Sequence

<220>
<223> Helicobacter pylori vacA nucleic acid sequence

<400> 244
gtggatgctc atacagctaa ttttaaaggt attgatactg gtaatggtgg tttcaacacc 60
ttagatttta gtggtgttac aaacaaagtc aatatcaaca agctcattac agcttccact 120
aatgtggccg ttaaaaactt caacattaat gaattggtgg ttaagattaa tggggtgagt 180
gtgggggaat acacttattt tagcgaagat ataggcagtc aatcgcgcat caacaccgtg 240
cgtttgga aa ctggcactag gtcaatctat tctggcgggtg tttaaattt 288

<210> 245
<211> 288
<212> DNA
<213> Artificial Sequence

<220>
<223> Helicobacter pylori vacA nucleic acid sequence

<400> 245
gtggatgctc atacagctaa ttttaaaggt attgatactg gtaatggtgg tttcaacacc 60
ttagattttca gtggtgttac agacaaggtc aatatcaaca agctcattac agcttccact 120
aatgtggcca ttaaaaactt caacattaat gaattggtgg ttaaaaccaa tgggtataagc 180
gtgggggaat acactcattt tagcgaagat ataggcagtc aatcgcgcat caacaccgtg 240
cgtttgga aa ctggcactag gtcaatctat tctggcgggtg tttaaattt 288

<210> 246
<211> 288
<212> DNA
<213> Artificial Sequence

<220>
<223> Helicobacter pylori vacA nucleic acid sequence

<400> 246
gtggatgctc atacagctaa ttttaaaggt attgatactg gtaatggtgg tttcaacacc 60
ttagattttca gtggtgttac agacaaggtc aatatcaaca agctcattac agcttccact 120
aatgtggcca ttaaaaactt caacattaat gaattggtgg ttaaaaccaa tgggtataagc 180
gtgggggaat acactcattt tagcgaagat ataggcagtc aatcgcgcat caataccgtg 240
cgtttgga aa ctggcactag gtcaatctat tctggcgggtg tttaaattt 288

<210> 247
<211> 288
<212> DNA
<213> Artificial Sequence

<220>
<223> Helicobacter pylori vacA nucleic acid sequence

<400> 247
gtggatgccc atacagctaa ttttaaaggt attgatactg gtaatggtgg tttcaacacc 60
ttagattttca gtggcggttac aaacaaagtc aatatcaaca agctcattac agcttccact 120
aatgtggcca ttaaaaactt caacattaat gaattggtgg ttaaaaccaa tgggtataagc 180
gtgggggaat acactaattt tagcgaagat ataggcagtc aatcgcgcat caacaccgtg 240
cgtttgga aa ctggcactag gtcaatctat tctggcgggtg tttaaattt 288

<210> 248
<211> 288

<212> DNA
<213> Artificial Sequence

<220>
<223> Helicobacter pylori vacA nucleic acid sequence

<400> 248
gtggatgctc atacagctaa ttttaaaggt attgatacgg gtaatggtgg tttcaacacc 60
ttagatttta gtggtgttac aggtaaggtc aatatcaaca agctcatcac agcttccact 120
aatgtggccg ttaaaaactt caacattaat gaattgattg ttaaaaccaa tggggtgagt 180
gtgggggaat acactcattt tagcgaagat ataggcagtc aatcgcgcat caataccgtg 240
cgtttgga aa ctggcactag gtcaatctat tctggcggtg ttaaattt 288

<210> 249
<211> 288
<212> DNA
<213> Artificial Sequence

<220>
<223> Helicobacter pylori vacA nucleic acid sequence

<400> 249
gtggatgctc atacagctaa ttttaaaggt attgatacgg gtaatggtgg tttcaacacc 60
ttagatttta gtggtgttac aggtaaggtc aatatcaaca agctcatcac agcttccact 120
aatgtggccg ctaaaaactt caacattaat gaattgattg ttaaaaccaa tggggtgagt 180
gtgggggaat acactcattt tagcgaagat ataggcagtc aatcgcgcat caataccgtg 240
cgtttgga aa ctggcactag gtcaatctat tctggcggtg ttaaattt 288

<210> 250
<211> 288
<212> DNA
<213> Artificial Sequence

<220>
<223> Helicobacter pylori vacA nucleic acid sequence

<400> 250
gtggatgctc atacagctaa ttttaaaggt attgatacgg gtaatggtgg tttcaacacc 60
ttagatttta gtggtgttac aggtaaggtc aatatcaaca agctcatcac agcttccact 120
aatgtggccg ttaaaaactt caacattaat gaattgattg ttaaaaccaa tgggtgtgagt 180
gtgggggaat acactcattt tagcgaagat ataggcagtc aatcgcgcat caacaccgtg 240
cgtttgga aa ctggcactag gtcaatctat tctggcggtg ttaaattt 288

<210> 251
<211> 288
<212> DNA
<213> Artificial Sequence

<220>
<223> Helicobacter pylori vacA nucleic acid sequence

<400> 251
gtggatgctc atacagctaa ttttaaaggt attgatacgg gtaatggtgg tttcaacacc 60
ttagatttta gtggtgttac aggtaaggtc aatattaaca agctcattac ggcttccact 120
aatgtggccg ttaaaaactt caacattaat gaattgattg ttaaaaccaa tggggtgagt 180
gtgggggaat acactcattt tagcgaagat ataggcagtc aatcgcgcat caataccgtg 240
cgtttgga aa ctggcactag gtcaatcttt tctgggggtg ttaaattt 288

<210> 252
<211> 288
<212> DNA

<213> Artificial Sequence

<220>

<223> Helicobacter pylori vacA nucleic acid sequence

<400> 252

```
gtggatgctc atacagctaa ttttaaaggt attgatacgg gtaatggtgg tttcaacacc 60
ttagatttta gtggtgtgac aggtatagtc aatatcaaca agctcatcac agcttcact 120
aatgtggccg ttaaaaactt caacattaat gaattgattg ttaaaaccaa tggggtgagc 180
gtgggggaat acactcattt tagcgaagat ataggcagtc aatcgcgcat caataccgtg 240
cgtttgga aa ctggcactag gtcaatcttt tctgggggtg tcaaattt 288
```

<210> 253

<211> 288

<212> DNA

<213> Artificial Sequence

<220>

<223> Helicobacter pylori vacA nucleic acid sequence

<400> 253

```
gtggatggtc atacagctaa ttttaaaggt attgatacgg gtaatggtgg tttcaacacc 60
ttagatttta gtggtgttac aggtaaggtc aatatcaaca agctcataac ggcttcact 120
aatgtggccg ttaaaaactt caacattaat gaattgattg ttaaaaccaa tgggtgtgagt 180
gtgggggaat acacttattt tagcgaagat ataggcagtc aatcgcacat caataccgtg 240
cgtttgga aa ctggcactag gtcaatcttt tctgggggtg tcaaattt 288
```

<210> 254

<211> 288

<212> DNA

<213> Artificial Sequence

<220>

<223> Helicobacter pylori vacA nucleic acid sequence

<400> 254

```
gtggatgctc atacagctaa ttttaaaggt attgatacgg gtaatggtgg tttcaacacc 60
ttagatttta gtggtgttac aggtaaggtc aatatcaaca agctcattac ggcttcact 120
aatgtggccg ttaaaaactt caacattaat gaattgattg ttaaaaccaa tgggtgtgagt 180
gtgggggaat acacttattt tagcgaagat ataggcagtc aatcgcacat caataccgtg 240
cgtttgga aa ctggcactag gtcaatcttt tctgggggtg tcaaattt 288
```

<210> 255

<211> 288

<212> DNA

<213> Artificial Sequence

<220>

<223> Helicobacter pylori vacA nucleic acid sequence

<400> 255

```
gtggatgctc atacagctaa ttttaaaggt attgatacgg gtaatggtgg tttcaacacc 60
ttagatttta gtggtgttac agacaaagtc aatatcaaca agctcatcac agcttcact 120
aatgtggccg ttaaaaactt caacattaat gaattgattg ttaaaaccaa tggggtgagt 180
gtgggggaat acactcattt tagcgaagat ataggcagtc aatcgcgcat caataccgtg 240
cgtttgga aa ctggcaccag gtcaatcttt tctgggggtg tcaaattt 288
```

<210> 256

<211> 288

<212> DNA

<213> Artificial Sequence

<220>

<223> Helicobacter pylori vacA nucleic acid sequence

<400> 256

```
gtggatgctc atacagctaa ttttaaaggt attgatacgg gtaatggtgg tttcaacacc 60
ttagatttta gtggtgttac agacaaagtc aatatcaaca agctcattac ggcttccact 120
aatgtggccg ttaaaaactt caacattaat gaattgattg ttaaaaccaa tggggtgagt 180
gtgggggaat acactcattt tagcgaagat ataggcagtc aatcgcgcat caataccgtg 240
cgtttgga aa ctggcactag gtcaatcttt tctgggggtg tcaaattt 288
```

<210> 257

<211> 288

<212> DNA

<213> Artificial Sequence

<220>

<223> Helicobacter pylori vacA nucleic acid sequence

<400> 257

```
gtggatgctc atacagctaa ttttaaaggt attgatacgg gtaatggtgg tttcaacacc 60
ttagatttta gtggtgttac agacaaagtc aatatcaaca agctcattac agcttccact 120
aatgtggccg ttaaaaactt caacattaat gaattggttg ttaaaaccaa tggggtaagt 180
gtgggggaat acactcattt tagcgaagat ataggcagtc aatcgcacat caataccgtg 240
cgtttgga aa ctggcactag gtcaatcttt tctgggggtg tcaaattt 288
```

<210> 258

<211> 288

<212> DNA

<213> Artificial Sequence

<220>

<223> Helicobacter pylori vacA nucleic acid sequence

<400> 258

```
gtggatgctc atacagctaa ttttaaaggt attgatacgg gtaatggtgg tttcaacacc 60
ttagatttta gtggtgttac aaacaaggtc aatatcaaca agctcattac ggcttccact 120
aatgtggcca ttaaaaactt caacattaat gaattgattg ttaaaaccaa tgggatgagc 180
gtgggggaat acactcattt tagcgaagat ataggcagtc aatcgcgcat caataccgtg 240
cgtttgga aa ctggcactag gtcaatcttt tctgggggtg tcaaattt 288
```

<210> 259

<211> 288

<212> DNA

<213> Artificial Sequence

<220>

<223> Helicobacter pylori vacA nucleic acid sequence

<400> 259

```
gtggatgctc atacagctaa ttttaaaggt attgatacgg gtaatggtgg tttcaacacc 60
ttagatttta gtggtgttac aaacaaggtc aatatcaaca agctcattac agcttccact 120
aatgtggccg ttaaaaactt caacattaat gaattgattg ttaaaaccaa tggggtgagc 180
gtgggggaat acactcattt tagcgaagat ataggcagtc aatcgcgcat caataccgtg 240
cgtttgga aa ctggcactag gtcaatcttt tctgggggtg tcaaattt 288
```

<210> 260

<211> 288

<212> DNA

<213> Artificial Sequence

<220>

<223> Helicobacter pylori vacA nucleic acid sequence

<400> 260

```
gtggatgctc atacagctaa ttttaaaggt attgatacgg gtaatggtgg tttcaacacc 60
ttagatttta gtggtgttac aaacaaggct aatatcaaca agctcattac ggcttcact 120
aatgtggccg ttaaaaactt caacattaat gaattgattg ttaaaaccaa tggggtgagc 180
gtgggggaat acactcattt tagcgaagat ataggcagtc aatcgcgcat caataccgtg 240
cgtttggaat ctggcactag gtcaatcttt tctgggggtg tcaaattt 288
```

<210> 261

<211> 288

<212> DNA

<213> Artificial Sequence

<220>

<223> Helicobacter pylori vacA nucleic acid sequence

<400> 261

```
gtggatgctc atacagctaa ttttaaaggt attgatacgg gtaatggtgg tttcaacacc 60
ttggatttta gtggcggttac agacaaagtc aatatcaaca agctcattac agcttcact 120
aatgtggcca ttaaaaactt caacattaat gaattgttgg ttaagaccaa tggggtgagt 180
gtgggggaat acactcattt tagcgaagat ataggcagtc aatcgcgcat caacaccgtg 240
cgtttagaaa ctggcactag gtcaatcttt tctgggggtg tcaaattt 288
```

<210> 262

<211> 288

<212> DNA

<213> Artificial Sequence

<220>

<223> Helicobacter pylori vacA nucleic acid sequence

<400> 262

```
gtggatgctc atacagctaa ttttaaaggt attgatacgg gtaatggtgg tttcaacacc 60
ttagatttta gtggtgttac aggtaaggct aatatcaaca agctcattac ggcttcact 120
aatgtggccg ttaaaaactt caacattaat gaattgttgg ttaagaccaa tggggtgagt 180
gtgggggaat acactcattt tagcgaagat ataggcagtc aatcgcgcat caataccgtg 240
cgtttggaat ctggcactag gtcaatcttt tctgggggtg tcaaattt 288
```

<210> 263

<211> 288

<212> DNA

<213> Artificial Sequence

<220>

<223> Helicobacter pylori vacA nucleic acid sequence

<400> 263

```
gtggatgctc atacagctaa ttttaaaggt attgatacgg gtaatggtgg tttcaacacc 60
ttagatttta gtggtgttac aggtaaggct aatatcaaca agctcattac ggcttcact 120
aatgtagccg ttaaaaactt caacattaat gaattgttgg ttaagaccaa tggggtgagt 180
gtgggggaat acactcattt tagcgaagat ataggcagtc aatcgcgcat caacaccgtg 240
cgtttggaat ctggcactag gtcaatcttt tctgggggtg tcaaattt 288
```

<210> 264

<211> 288

<212> DNA

<213> Artificial Sequence

<220>

<223> Helicobacter pylori vacA nucleic acid sequence

<400> 264

```
gtggatggtc atacagctaa ttttaaaggt attgatacgg gtaatggtgg tttccacacc 60
ttagatttta gtggtgttac aggtaaggtc catatccaca agctcattac ggcttccact 120
aatgtggccg ttaaaaactt ccacattaat gaattgattg gtaaaaccaa tgggataagt 180
gtgggggaat acactcattt tagcgaagat ataggcagtc aatcgcgcat caataccgtg 240
cgtttggaat ctggcactag gtcaatcttt tctgggggtg tcaaattt 288
```

<210> 265

<211> 288

<212> DNA

<213> Artificial Sequence

<220>

<223> Helicobacter pylori vacA nucleic acid sequence

<400> 265

```
gcgagcgctc atacggtcaa ttttaaagat attgatactg gtaatggtgg tttcaacacc 60
ttagatttta gtggtgttac aaacaaggtc aatatcaaca agctcattac agcttccact 120
aatgtggcca ttaaaaactt caacattaat gaattgttgg ttaaaaccaa tgggataagt 180
gtgggggaat acactaattt tagcgaagat ataggcaatc aatcgcgcat caacaccgtg 240
cgtttggaat ctggcaccag gtcaatctat tttgggggtg tttaaatta 288
```

<210> 266

<211> 288

<212> DNA

<213> Artificial Sequence

<220>

<223> Helicobacter pylori vacA nucleic acid sequence

<400> 266

```
gcgagcgctc atacggtcaa ttttaaagat attgatactg gtaatggtgg tttcaacacc 60
ttagacttta gtggtgttac aaacaaggtc aatatcaaca agctcattac agcttccact 120
aatgtggccg ttaaaaactt caacattaat gaattgttgg ttaaaaccaa tgggataagt 180
gtgggggaat acactaattt tagcgaagat ataggcaatc aatcgcgcat caacaccgtg 240
cgtttggaat ctggcactag gtcaatctat tctgggggtg tttaaattt 288
```

<210> 267

<211> 288

<212> DNA

<213> Artificial Sequence

<220>

<223> Helicobacter pylori vacA nucleic acid sequence

<400> 267

```
gcgagcgctc atacggtcaa ttttaaagat attgatactg gtaatggtgg tttcaacacc 60
ttagacttta gtggtgttac aaacaaggtc aatatcaaca agctcattac agcttccact 120
aatgtggcca ttaaaaactt caacattaat gaattgttgg ttaaaaccaa tgggataagt 180
gtgggggaat acactaattt tagcgaagat ataggcaatc aatcgcacat caacaccgtg 240
cgtttagaaa ctggcactag gtcaatctat tctgggggtg ttaagttt 288
```

<210> 268

<211> 288

<212> DNA

<213> Artificial Sequence

<220>

<223> Helicobacter pylori vacA nucleic acid sequence

<400> 268
gcgagacgtc atacggtcaa ttttaaagat attgatactg gtaatggtgg tttcaacacc 60
ttagatttta gtggtgttac aaacaaggtc aatatcaaca agctcattac agcttccact 120
aatgtggccg ttaaaaactt caacattagt gaattgttgg ttaaaaccaa tgggataagt 180
gtgggggaat acactaattt tagcggagat ataggcaatc aatcgcgcat caacaccgtg 240
cgtttgga aa ctggcactag gtcaatctat tctgggggtg ttaagttt 288

<210> 269
<211> 288
<212> DNA
<213> Artificial Sequence

<220>
<223> Helicobacter pylori vacA nucleic acid sequence

<400> 269
gtggatgccc atacggtcaa ttttaaaggt attgatactg gtaatggtgg tttcaacacc 60
ttagatttta gtggtgttac agacaaggtc aatatcaaca agctcattac agcttccact 120
aatgtggcca ttaaaaactt caacattaat gaattgttgg ttaaaaccaa tgggataagc 180
gtgggggaat acactcattt tagcgaagat ataggcagtc aatcgcgcat caataccgtg 240
cgtttgga aa ctggcactag gtcaatctat tctggcggtg ttaaattt 288

<210> 270
<211> 288
<212> DNA
<213> Artificial Sequence

<220>
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aatgtggccg ttaaaaactt caacattaat gaattgttgg ttaaaaccaa tgggataagt 180
gtgggggaat acactaattt tagcgaagat ataggcaatc aatcgcgcat caacaccgtg 240
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<210> 271
<211> 288
<212> DNA
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<220>
<223> Helicobacter pylori vacA nucleic acid sequence

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aatgtggccg ttaaaaactt caacattaat gaattgttgg ttaaaaccaa tgggataagt 180
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gtgggggaat acactaattt tagcgaagat ataggcaatc aatcgcgcat caacaccgtg 240
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aatgtggccg ttaaaaactt caacattaat gaattgttg ttaaaaccaa tgggataagt 180
gtgggggaat acactaattt tagcgaagat ataggcaatc aatcgcgcat caacaccgtg 240
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<212> DNA
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aatgtggcca ttaaaaattt caacattaat gaattgttg ttaaaaccaa tgggataagt 180
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aatgtggcca	ttaaaaactt	caacattaat	gagttgttgg	ttaaaaccaa	tgggataagt	180
gtgggggaat	acactaattt	tagcgaagat	ataggcaatc	aatcgcgcat	caacaccgtg	240
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<220>
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<210> 279
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<400> 279	
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<210> 280
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